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ComputerWeekly
RECRUITMENT AND EDUCATION SUPPLEMENT

SYSTIME
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Thursday November 11 1982

Where demand for DP staff is growing

UK professionals are sought after overseas says Mark Wenek

GETTING rich quick is something most DP professionals cast aside at a tender age. But a select band of DPers have been going abroad to seek their fortunes.

Most overseas recruitment consultancies this year recorded a demand for staff unaffected by a worldwide recession. The UK DP professional, it appears, is a much sought after individual.

Despite the unstable nature of the Middle East, demand for UK computer staff is growing there. The opportunities in the US have also grown considerably in 1982.

Tony Vickers, head of international operations at VLI Recruitment said: "In the Middle East the big oil producers and banking organisations are embarking upon and expanding massive and exciting DP installations.

"There are two main reasons why they go for UK staff. Firstly there are the existing historical ties – the Arabs have traditionally done business with Britain.

"Secondly there's the fact that the Americans were largely instrumental in opening up the computer business in the Middle East – hence the desirability of English-speaking staff."

For those considering a job in the Middle East, money is the prime (and in many cases the only) factor.

Vickers said: "For a man with five or more years practical experience we're talking about something in the region of £20,000 a year plus, with very little taxation."

And according to Joe Haynes, of consultancy Comcap: "People going to these Arab installations will encounter the very latest state of the art equipment.

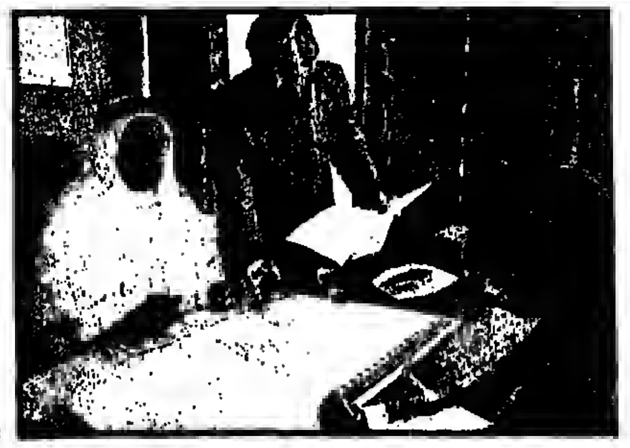
"When they return not only are they richer but they possess up-to-date, saleable skills."

The Middle East is still very much the domain of the single male. Most of the Arab nations are, if anything, undergoing a state of retrenchment in terms of Islamic culture. Regrettably this leaves little room for the Western idea of the career woman.

Neither Vickers nor Haynes sees the Middle East as a place to take one's wife and kids.

All recruiters also agree that the Middle East can be a hostile environment. Cultural and environmental differences can take their toll.

Most Arab countries outlaw alcohol, while accommodation can be less advanced than computer hardware.



Arabs have traditionally done business with Britain.

Most recruiters set highly stringent qualifying tests. VLI, for instance, presents applicants with mini-exams in their specialist areas. They are also assessed in terms of ability to deal with the sort of life they are likely to find in the Middle East.

Once there, the work still has to be done before you collect your pot of gold. Vickers said: "Almost without exception, people going to the Middle East work on new development projects, putting in the hours that such projects require."

Because those moving to the Middle East will often find themselves team-leaders on high-level, specialist operations, the recruitment consultancies tend to deal with high-calibre people, and competition for places can be tough.

Again, UK DPers seeking to work in the US are likely to be in it for the money. Salaries for specialists with some five years' experience could be about £20,000, although taxation in the US is more of a factor than in the Middle East.

Mike O'Connor of consultancy Programming and Systemsolve said: "On the whole the big attraction of the US is the lifestyle.

"But this can sometimes backfire if, for instance, a UK man finds himself with a large manufacturing organisation in a bleak industrial area in the North-east."

Another advantage is that family people can apply.

The chief demand is for IBM specialists, but there are a fair number of opportunities for those with Univac and Digital Equipment backgrounds.

According to Vickers, the US is unlikely to meet its own growing demand for programmers and analysts in the near future. VLI's US business expanded to $7 million this year and is likely to exceed $10 million by the end of 1983.

Western Europe is another major overseas recruitment market, but far smaller than the other two, mainly owing to the language problem. When Western European outfits turn to the UK for staff they often want specially qualified individuals.

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Increasing demand in the manufacturing and distribution sectors has highlighted the need for our client, one of the major U.K. systems consultancies, to recruit consultancy calibre staff in these areas:
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They wish to identify Production Engineers who can make an immediate and significant contribution in consultancy activities. Likely assignments will include the optimisation of manufacturing resources and profit improvement planning.
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Candidates experienced in the implementation of distribution, planning and control systems are being sought. A knowledge of: ★ Warehouse design, layout and operations ★ Materials handling ★ Inventory management and control would be appropriate.
Contact: Margaret Stevens in London

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Our client, is a successful printer well established in the use of computer technology for complex text handling and database applications.
Through growth they now need an additional Programmer/Analyst to join the Technical Department Team. (The right candidate may be appointed as Deputy to the Technical Manager).
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Candidates should have a degree in Computer Science or a related subject, with a minimum of several years' industrial background in computing. Significant programming experience must be demonstrated, preferably in FORTRAN or BCPL. In addition, candidates should ideally have text handling and database experience.
Contact: James Baker in London

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Our client specialises in the development and marketing of applications software products and is keen to expand their SYSTEMS SOFTWARE team.
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Applicants should have solid experience of IBM systems programming, ideally involving a DOS operating system. Proficiency with Assembler would be appropriate and familiarity with other mainframe environments would be a bonus.
Contact: Bev Stevens in Birmingham

Project Manager
London to £15-£16k
The COMMONWEALTH SECRETARIAT, who are responsible for co-ordinating major studies within the Commonwealth countries, require a Project Manager to take responsibility for introducing the use of computers into their London headquarters. The person appointed will be responsible for the entire project – from defining the future computing needs of the organisation, through to the procurement and implementation of suitable hardware and software packages.
Suitable candidates are likely to be graduates, with at least five years' d.p. experience, and be aware of the latest developments in local area networks and database. Proven project management ability is essential.
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Thursday, November 18, 1982 Number 836 35p

PT7 cuts costs
FERRANTI Computer Systems

IBM gives in to its users on price rises

by Kevan Pearson

THE IBM Computer User's Association has won important concessions from IBM in its battle against the company's six-monthly price rise policy.

IBM has, in so many words, agreed that it will abandon its policy of two price rises a year, and it will consult much more closely with the CUA on this and other matters. The company, however, will not withdraw the September announced price increase which sparked off the controversy.

While the CUA will be disappointed at IBM's unwillingness to cancel the latest increase, which comes into effect from December, it will no doubt be pleased that IBM has not proved as intransigent as *might* at first have been imagined.

In a series of letters to John Grant, chairman of the CUA, IBM has attempted to justify the last increase, which the CUA said would increase members' costs on average by about 14%.

But Grant feels he had two very strong bargaining points: the 30% hike in IBM world trade profits, and price cuts on the 4300 series and other small systems of up to 34% in the US. Last week IBM repeated the 4300 price cuts in the UK, though by up to 25%, only on the 4331 and 4321 models.

IBM's constant line of attack on the CUA's criticism has been that purchase prices, the most significant item in a purchase decision, have actually fallen since 1979 when the twice a year price became reality.

IBM's own figures show that the price of the 3033, soon to be discontinued, is down to 48% of its value in 1979. While the drop in the price of the 4341 is 11% over the period.

But maintenance on both the 4341 and 4331 models has risen by 41% and 39% respectively in the same period, and lease/rental charges on the same machines have gone up by 38% and 35% respectively.

CLEAVER . . . full weight to be given to CUA views.

It is these rises that the CUA found so unacceptable. The CUA argues that user budgets are based on the prices quoted at the time the budget is drawn up, and that prices could have gone up twice, in some cases during the period of a budget.

Furthermore, the cut in purchase prices not only did not provide any benefits for users who have already bought machines, it also reduced the residual value of these machines.

Tony Cleaver, IBM's assistant general manager in the UK, has undertaken to ensure that "full weight is given to your (the CUA's) views in future price rises".

Grant says "IBM underestimated user reaction to the present price rises."

"When Tony Cleaver was at IBM UK before, he had a very good relationship with the CUA. He went to IBM Europe, but now that he's back as UK assistant general manager we are looking forward to continuing that close relationship with him," Grant explains.

■ IBM has made the UK announcement of two new models of its 4341 small mainframe range. The 4341 model 9, an entry level system costing £62,000, and the model 11, a top range system

WALDEGRAVE . . . "It should be possible to find the money."

Call for a Perq in every poly

by George Black

LOCAL education authorities have been pressed to spend more on computing equipment for polytechnics by Education Under-Secretary William Waldegrave.

Speaking at a demonstration of ICL's Perq workstation at Queen Mary College, London, he said: "I'd like to see several of these machines in every university and polytechnic in the country. Even in the present tough times it should be possible to find the money."

Under a special offer from ICL, polytechnics will be able to buy the Perq through local education authorities at the same reduced rates as the universities.

The Education Department has just ordered 50 for use in universities as an Information Technology Year initiative.

Waldegrave added: "The Perq has a very powerful software package with an extremely wide range of applications for virtually every academic department."

Henry Norton, secretary of the Computer Board for Universities and Research Councils, said: "It's worth spending money on a standard, powerful machine like this because it avoids duplication of effort on software by using various less powerful micros."

Universities have been allowed to buy the Perq, with one megabyte of memory, for £15,900 each – 28% off the hardware's market price. And they will also get 90% off the software price. Queen Mary College, as primary licence holder, will co-ordinate distribution and development throughout the country.

The Science and Engineering Research Council has already ordered 100 Perqs and the Education Department has taken delivery of its first 30.

With its A4 sheet-sized screen, the Perq has been exclusively Pascal-based under its own operating system, but this week brings in C language running under Unix and will follow soon with Fortran. Many applications under the POS will become available under Unix, including Gino, Nag, Grafiks, Glim and Pafec.

■ The Severn Trent Water Authority has tied itself to ICL for the next seven years in a contract worth over £12 million. The deal is one of the longest won by ICL and covers the water authority's next four hardware upgrades.

'Desktop mainframe'

"A MAINFRAME on every desk" is the theme behind Hewlett-Packard's worldwide launch this week of a 32-bit desktop computer for engineers and scientists. The company believes it to be the most powerful computer workstation on the market.

The HP 9000 uses the five-chip set announced earlier this year, "super chips" which HP claims pack up to eight times more circuits into the same space as currently available integrated circuits.

With up to three central processors in every unit, the HP 9000 offers Unix and Basic operating systems; Ethernet and HP networking, and Pascal, Fortran and C languages. First deliveries of the single processor HP 9000 series 500 will begin in December, with volume shipments by March 1983.

Announcing the workstation at a worldwide satellite teleconference, executive vice-president Paul Ely called the product a breakthrough in the technical markets, and said it gives the best of both worlds: "Distributed networks of individual computers, as well as the big mainframe benefits of sheer processing power."

Filetab fails in legal bid against Ace

FILETAB Support Services last week failed to gain an ex-parte injunction against fellow software house Ace Microsystems. The aim was to prevent Ace showing its decision table based language compiler "D" at this week's Compec exhibition.

No injunction was granted. At the hearing on Friday last week, the judge ruled that there was no case, and Ace did not even have to speak on its own behalf.

Wang profits leap

WANG Corp has announced first quarter results which show that revenues rose 29% to $305 million from last year's $236 million. Profits rose even faster at 39% to $25 million, compared with $18 million for the first quarter of last year. Even more heartening for Wang was the rise in new orders, which were 32% ahead of last year's. Performance in Europe was particularly strong, said Wang.

Turnover 125% up

SUPER Sirius marketer ACT has turned in first half profits 66% up on the same period last year. Profits were £791,000 pre-tax, compared with £475,000 for the six months to September 30 last year. Turnover has jumped a phenomenal 125% from £3.65 million for the six months ended September 30, 1981 to £8.03 million this year.

Zygal injunction

A COURT injunction has been granted to Zygal Dynamics, a terminal distributor which last month bought up the cash-strapped modem manufacturer Modular Technology, against its former owner John McNulty, preventing him from using the name Modern Technology which he had registered as a new company.

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Mercury, BT agree on rates

by Donald Kennett

MERCURY Communications and British Telecom have at last hammered out the terms for connections betweeo their two networks.

The government had asked to be informed by July 30 if talks between the two had reached a deadlock. But despite being "exceedingly tough", negotiations remained "entirely friendly", according to a Mercury spokesman and both parties preferred to press on without governmeot mediation.

Mercury will make a "modest annual payment in consideration of BT's eotering into the agreement", but otherwise BT will charge Mercury the same rates as it charges its other customers and any non-standard service charges will be calculated on the same basis as for other customers.

The arrangement will avoid the need for Mercury's customers to pay two separate bills where their connections use both networks.

Three types of connection between the two networks will be involved - where a customer reaches the Mercury oetwork via a BT leased line, via a dialled call through BT's network and via equipment such as a private exchange that is rented from or maintained by BT.

The agreement runs for 15 years, the same as the minimum period for Mercury's operating licence.

International connections are being negotiated separately with British Telecom International and agreement is expected soon.

Mercury is to start operating in London next spring usiog microwave radio links. In the autumn it is to be extended to Coventry, Birmingham and Manchester by microwave links costing £17 million. These will be replaced by optical fibre cables laid alongside railway tracks, while the microwave equipment is used to set up the next sections of the network.

The network will be exteoded to 30 major towns using £50 millioo worth of optical fibre cabling by the end of 1985 and more beyond that as demand grows.

Mercury will heve its own ground station near london for international satellite links to the US vis Intelsat.

But it has delayed iovitiog teoders for the supply of the ground station because it has yet to find a suitable site with good access to access to London and low electromagnetic ioterference.

It has also delayed ordering the optical fibre cable because the government's plans to allow multichannel cable television networks are changing Mercury's estimates of the capacity it will need.

GIBBENS . . . "We had to get the Post Office to put a new entry classification in the Yellow Pages."

No solemnity at CAP's celebratio

by Ron Coates

THE UK's oldest software bouse last week celebrated its 20th birthday at London's Barbican Centre.

Computer Analysts and Programmers, better knowo by the acronym CAP, insisted that the occasion was a "celebrious" one rather than a celebration because according to chairman Barney Gibbens, celebratioo had overtooes of solemnity which he wished to banish.

Gibbens managed to avoid solemnity for most of the evening apart from a hearfelt reference to CAP's all too recent problem years. He said: "This is oot to say that we did not have our nights of prayera to the gods of private enterprise."

He recalled: "In 1962 there was no such thing as a software house. We had to get the Post Office to put a new entry classification in the Yellow pages."

Aod he pointed out that many of the ideas put up by his generation of soft...'e people were toot the machines of the 1960s.

"We are now going thro period of rediscovery of ... techniques of 20 years ago."

Gibbens added that it h searched his experience fo rules that should govern s houses, and he claimed to found them posted in a ... They were: "Be efficient, b nest, be nice to your friends your hands clean and no kick the playgrouod".

'Japan can't deliver 5th generation'

DORN . . . "Misplaced enthusiasm."

by Andrew Tbomas

THE fifth generation is not destined to come from Japan.

That was the view expressed Mooday by US consultant Phil Dorn, speaking at the Pergamon Infotech State of the Art Review. He claimed that the Japanese only score in comparatively low-teehnology industries and lack the innovative skills to lead the world in computing.

"The Japonese will not dominate the next generation even with help from intellectual dilettantes who hste IBM blindly," says Dorn. "Tbey have an outsrandiog ability for low-cost, high-volume production, but do cot appear to have a grest receptivity to new ideas or aptitude for high technology.

"It is extremely difficult to name a single major idea in computing, hardware or applications, that came from a Japaoese source. The only real exception is Pac-Man."

And Doro also asks whether the current enthuaiasm for the fifth generation among industry pundits is misplaced, stating that most companies are more concerned with running the business than installing the latest computer teebnology.

Dorn states that computing resources devoted to financial and administrative applications only account for 25% of the total resource, and marketing and manufacturing total 45%.

"Raw technology is moving ahead steadily, but software seems to have stalled and little progress has been made for most users. The hardware is faster, more reliable and a good deal cheaper, but it is still used oo the same tired application and in nesrly the same way as 15 years ago," he says.

But Dorn's attitude towards the fifth generation is perhaps best summed up in hia question "Why bother with a fifth geoeratioo when we haven't been able to handle the last four?"

Maurice Wilkes of DEC agrees with Doro's observatioo on the static state of software:

"The time was when you built a shiny new computer, you'd invent a shiny new language to run on it, but not any more," he says. "Now what happeced to languages will happeo to operatioo systems. The transportable operating systems are the future, and we're not far away from atandards now."

FULLER . . . IBM headaches.

Leasing firms hit snags on maintenance

by Kevan Pearsoo

MAINTBNANCE headaches are worrying the independeot IBM leasing industry.

Some IBM branches are refusing to take equipmeot brought into Europe from the US into maintenance, except on an expeosive Request Price Quotatioo basis, or on a time and materials basis. John Fuller, managing director of independent leasing company PCML, eites a Midlands company which was told in writing by its local IBM branch that if it purchased equipment from PCML brought in from the US it would not be takeo toto IBM's standard maintenance contract for 12 mooths.

This, says Fuller, is totally coo-trary to policy stated by IBM's Industry Relations section, which deals with other companies in the computer industry.

Normally restrictioos like this apply only to the free maintenance period which comes under the warranty and installation clause in a lease or purchase cootract.

Portable suppliers take aim at IBM

by Robert Parry

Portable personal computers have moved upmarket. Portability alone seems no longer enough for the latest entrant- and they are turniog to t' ...ner emerging micro treod – compatibility with the IBM Personal Computer.

Canadian company Dyoslogic was the first to go for this market niche, when it launched the Hyperion in June. The Hyperioo weighs 20lbs and Dynalogic aims to undersell the IBM PC by around $2,000 for machines of the same capacity while cashing in on the market for computers-to-tuck-under-your-aeroplane-seat forged by Adam Osborne with Osborne 1.

The market is livening up quickly with the appearance of portable IBM look-alikes from US firms. Texas-based Compag Computer has been quick off the mark with a machine whicb is claimed to be directly compatible with IBM PC software and with the add-on hardware making ita way on to the IBM PC market.

The Compag machine will also sell for less than a comparable IBM PC. At $2,995 for a 128K single floppy machioe, it is about $600 cheaper.

The company was fouoded only nine months ago, but it carries a good pedigree. It easily raised $10 million in start-up funds from venture capitalists, including the well-reapected Sevin-Rosen partnership. Sevin is founder of semtconductor manufacturer Mostek, and Rosen is an influential industry observer and oewsletter publisher.

Last week portable terminal specialist Computer Devices joined the fray by unveiling a portable personal compute... Dot. Like the IBM PC it ... Intel 8088 processor and ... MS-DOS operating system. It has two expansion slots ... IBM bus-compatible, but ... compatibility ceases.

Dot uses 3½-inch micro... drives from Sony, rather th... 5¼-inch floppy drives fa... the IBM, so it cannot use ... disc media – unlike mo... look-alikes coming onto the... ker.

Computer Devices' pres... Seaforth Lyle, says that ... which has optional built-in ... and modems, outperforms IBM PC and the DEC Rainbow.

While all this activity goes the 16-bit reaches, eight-bi... bles cootinue to grow in ... and capability. The Osborne ... leads the field, and despite ... formance disadvantages com... to the 16-bit devices, will co... to beat them easily on price ... principally on the wealth of ... ware included in the Osbo... price tag.

The Osborne faces intense competition from British ne... comer ITCS, which has just ... out with the first portable com... ter to include a Winchester ... and from Japanese micro ma... Sord, which is offering the pro... ble version of its M23 machine ... thia country oow.

According to David Le... Pryce, managing director of ITC... orders are flooding in for its L... dromeda micros, particularly ... portable Zita. He has just sign... deal with Rymans, the statio... and office equipment chain, for ... stores to carry the Zita range.

Protection Bill is spelt out in detail

by our Parliamentary Correspoodent

LADY Young, Leader of the House of Lords, has spelt out the government's plans for the forthcoming Data Protection Bill in greater detail, during the Lords debate on the Queen's Speech opening Parliament.

And she has made it absolutely clear that the Bill will not apply to data held in manual form – the source of concern particularly to Labour MPs.

She said that the Bill would also be limited to information held about individuals.

The Bill, said Lady Young, would provide members of the community with new rights to protect them against the misuse of information on computers. The government wanted to provide reassurance that personal information held on computers would not be abused or misused.

The Bill would also put the UK in a position to ratify the Council of Europe Convention on Data Protection.

Effect would be given to proposals in the White Paper published last April by establishing an independent registrar, who would be the key figure in the new arrangements. The registrar would maintain a register of all users of automatically processed personal data, subject possibly to exemptions discussed in the White Paper.

Lady Young said that under the Bill it would become a criminal offence to use automatically processed personal data without being registered. Through the register, it would become possible to know the extent to which personal data was processed and enable citizens to discover who might be processing data about them.

The registrar would be charged with the task of ensuring that users complied with certain geoeral principles oo data protection which were included in the European Convention. These principles concerned the collection, use and disclosure of data, their accuracy and relevance and the measures taken to keep them secure.

The registrar would be empowered to issue nooces against a user breaching any of these principles, and non-compliance with such a notice would be a criminal offence.

The Bill would also provide a right for individuals to have access to data held about them, and to have the data corrected or erased if they were held in breach of aoy of the general principles.

Additionally, new civil remedies would be created by the Bill to enable someone who auffered damage to get compensation.

Lady Young atressed the increasing importance of the UK providing for data protection because of the action being taken among the country's trading partners.

LADY YOUNG . . . Bill is limited to information held about individuals.

French govt databank centre accused of commercial interest

by Jack Gee

TELESYSTEMES, the French State-owned host centre for scientific and technical databanks, is under fierce attack by political opponents of the Socialist government for buying a controlling stake in a leading commercial database.

The purchase of 52.43% of the capital of Unioo Française d'Annuaires Professionels has become the target of parliamentary questions which are seriously embarrassing the governmeot.

Télésystémes is a subsidiary of the French telecommunications authority which has received a FFr100 million (£8 million) subsidy from the national exchequer.

Télésystèmes reports it has sold 40,000 hours in three years, so the subsidy works out at FFr2,500 (£200)an hour.

French Telecom eojoys a moooopoly of data transmission in France over Transpac, its packet switching oetwork. But the authority's code of behaviour forbids it to get involved io the information cootent which it transmits.

The purchase of a controlliog stake in the UFAP databank is being challenged in Paris as a serious breach by French Telecom of its own charter.

At the opening of Télésystèmes' host centre at Valbonne, Southern France, three years ago, the late Minister for Telecommunoications Nerbert Segard said: "French Telecom will not intervene as a service provider in any case except in traditional fields like telephone directories."

French Telecom has paid an advance of FFr5 million (£400,000) for its stake in Télésystèmes. It will have to foot the bill for a FFr2 million (£160,000) loss in 1981. Télésystèmes' profit of about FFr6 million (£480,000) is well below its subsidy.

Bernard Stasi, a former cabinet minister, has put a quesiion in the National Assembly to Telecommunications Minister Louis Mexandeau about Télésystèmes' involvemeot with UFAP. Stasi asked: "Is not this situation a breach of the code which governs the telecommunications authority and forbids it under any circumstances to control the productioo of information?

"What measures do you intend to take to ensure that French Telecom's subsidiaries respect the traditional divisioo between the productioo and transmission of information?"

IBM-compatible to sell turnkey packages

by Howard Karteo

STORAGE Technology Corp, best known as an IBM-compatible tape and disc manufacturer, recently established a subsidiary to market complete IBM-compatible turnkey packages.

STC Ultimacc Systems in Wildwood, New Jersey, will market two turnkey packages based oo the Magnuson M80/30 series CPUs.

The systems will be sold fully configured with STC peripherals and STC-modified applicarion software, and users will be able to use only STC disc and tape drives. Printers will come from Documation, a Melbourne, Florida printer manufacturer acquired earlier by STC.

STC was previously working closely with Magnuson on its virtual storage system, a projected scrapped by STC in early August. Ultimacc will have its own sales and maiotenaoce force, operatiog at least initially out of STC braoch offices. The subsidiary is still in the process of gearing up, according to STC USI sales vice-president Gil Kellersman.

STC USI is currently operating in a phased atart-up mode, and will be adding braneh offices in the future. The company currently has no firm plans to market its USX39 and USX40 systems overseas.

Magnuson has beeo in finaocial difficulties, and recently worked out a bailout plan with its beckers and creditors. Magnuson had a net loss of $8.8 millioo for the first half of 1982.

Kellersman noted that although his compaoy was now, in effect, single-sourcing its CPU, it could change to another CPU supplier with relative ease should it prove necessary.

If you think that wordprocessing is just an easy way of typing letters

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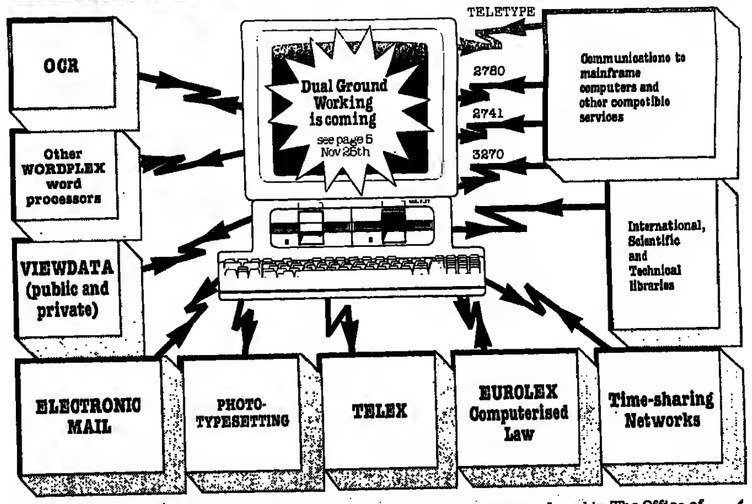

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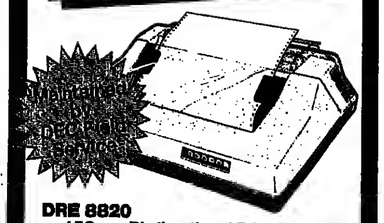

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Microdata loses race for CMC

by John Riley

PHILIPS has beaten *Microdata*, the US-based small business systems maker, in a race to buy the key-processing division of the bankrupt CMC France which has been administered since July by the French government and banks.

Microdata has bought the CMC companies in Germany and Switzerland, and was looking to CMC France to complete its set of European CMC companies.

The US-based Computer Machinery Corporation sold off its European subsidiaries in the 1970s to various buyers.

CMC (UK) was bought from the US parent by its own management, and then bought by Microdata in 1978. *Microdata* was itself a subsidiary of McDonnell Douglas Corp. The only connection with Britain is that CMC in Europe has been a regular customer of CMC (UK).

Up to a week ago Microdata was confident that it would be successful in acquiring the CMC France key-processing division. But now the Paris-based Philips Data Systems will take on from 100 to 140 personnel from the division.

The information processing division of CMC France has been bought by Data 100, the French subsidiary of Northern Telecom. Data 100 will take on about 20 people. The future of the remaining 225 employees is still uncertain.

Carl Brandt, vice-president of *Microdata European Marketing*, Sales and Service, said: "You can't win all the time. However, this will not stop our expansion into France. We will certainly start a company in France although it will now take a little longer than planned".

Microdata began its drive into Europe with the acquisition of CMC West Germany and CMC Switzerland. Both now come under the *Microdata* name, and most of the employees will be integrated in the German *Microdata* and the Swiss Microdata Business Systems.

In addition, *Microdata* recently signed agreements with two computer leasing companies, Nordic Leasing International of The Hague and Scandilease of Switzerland, who own the leases on equipment placed respectively by the German and Swiss companies.

Microdata has contracted to supply a maintenance service for certain data entry and communications products currently on lease to CMC customers. Further growth is planned, and Brandt hopes that Microdata will move into France and Holland in 1983, and into Spain and Italy in early 1984.

DUDSON . . . Expanding Rodime's manufacturing operation.

Users slam DOS/VSE in survey

by Kevan Pearson

IBM's medium range operating system, DOS/VSE, has been heavily criticised in a survey of 250 VSE users in the UK, conducted by the Xephon Consultancy.

DOS/VSE is one of IBM's most widely-used operating systems because it is used mainly on the popular 4300 series of medium range computers.

Among the major criticisms voiced by users were its job control language and its time sharing facilities. Many users feel that DOS/VSB is too complex for its relatively unsophisticated features, according to Jeff Hosier, Xephon's research director.

But Hosier said that the same survey revealed user satisfaction with VM/CMS, IBM's virtual machine time sharing system. "VM/CMS is very user-friendly, easy to understand and gives good performance. In fact MVS — IBM's large machine operating system — sites usually prefer CMS to either TSO or ICCF," said Hosier. Another criticism of VSB is that when it runs out of power, users do not have an easy upgrade path, because of VSE's basic incompatibilities with MVS.

Conversion from DOS/VSB to MVS was discussed at a recent user meeting organised by IBM Europe. Over 200 users are believed to have attended.

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Rodime to supply £8m of drives for ICL

by Andrew Thomas

ICL has gone north of the Border for supplies of 5¼in Winchester disc drives for its small systems.

In a three-year deal worth £8 million, Fife-based Rodime has contracted to deliver drives of up to 21Mbytes capacity for use in the ICL Personal Computer and the DRS and System 25 ranges.

The deal comes within a month of Rodime's first share issue on the New York unlisted securities market, when 1.1 million shares raised $9 million. Rodime's marketing director, Malcolm Dudson, says that the money will be used for both expansion of the company's manufacturing operation and the development of new products.

ICL has carried out extensive tests of the Rodime drives alongside other contenders for the deal including Tandon and Seagate, and Dudson sees the award of the contract as confirmation of Rodime's lead in the market.

"We won this contract after a detailed evaluation of its entire operation — products, manufacturing facility, development capability, staff and financial resources.

"The contract was won in the face of stiff competition from Tandon and Seagate and clearly emphasises that Rodime is firmly established in the very forefront of the 5¼-inch Winchester market."

The decision of IBM to manufacture its Personal Computer at Greenock is seen by Dudson as an opportunity for Rodime to gain inroads into the lucrative IBM world, despite as yet unconfirmed reports that the IBM disc deal has been awarded to Seagate.

"Let's just say we've had visitors from quite important US companies," says Dudson.

Teaching micro can be used by beginners

by George Black

TEACHERS will be able to develop lessons on any subject without any computer expertise, using a new system from the National Physical Laboratory at Teddington.

The system was unveiled last week by Information Technology Minister Kenneth Baker. The NPL's invention is to be marketed by BBC Publications, Commodore, Acornsoft and Mantissa.

"There is an extremely wide range of applications which can complement conventional teaching," said the development group leader Nigel Bevan. "And it doesn't have to be limited to schools either. The principle is the same for the training of staff."

A micro version is to be sold under the name of Microtext.

Non-computing teachers will be able to write their own computer-based interactive teaching material and to edit and rearrange text on the screen. Lessons can be exchanged with other teachers and adapted to particular needs. A student's ability can be assessed by the software and work tailored accordingly.

"This could be useful, for instance, in remedial arithmetic," suggested Bevan.

EEC should get IT together

by our Parliamentary Correspondent

THE government wants more cooperation with the other Common Market countries in developing new technologies, particularly information technology.

Kenneth Baker, Minister of Information Technology recently set out the government's thinking in a speech in Paris.

And now Douglas Hurd, Minister of State at the Foreign Office, has hit out at the danger of the EEC squandering a unique historical opportunity of acting together to develop computers and robotics to soak up demand which might otherwise go to the Japanese.

Hurd has pointed out that the EEC countries' individual home markets do not offer a large enough base for an industry where volume sales and world market share are the key to success.

The Common Market Commission has come up with some interesting proposals of its own — particularly ESPRIT, the European Strategic Research Programme in Information Technology. British Ministers have been pursuing these ideas through the Science and Engineering Research Council.

■ Kenneth Baker announced to the Commons a decision to allocate the microelectronics application project — MAP — an additional £30 million as part of the Budget innovation package. Baker said MAP was in sight of exhausting its original funding of £55 million but a lot remained to be done.

SALES BRIEF

ITT in £2m deal to link Euro network

A EUROPEAN network of IBM mainframes is to be linked by £2 million worth of ITT 3800 communications controllers in a contract awarded by Datema, the computer bureau division of Axel Johnson.

Mainframes in Stockholm, Gothenburg, Oslo, Copenhagen, Frankfurt and Bristol, each dedicated to one database and running under the DOS/VSE operating system, will be available for dial up by all Datema customers.

Tories vote ICL

ICL has won a contract worth £100,000 from the Conservative Party to automate the London Central Office. The contract includes an ME29 distributed mainframe, a DRS Model 40 word processor, and two Model 10 intelligent workstations.

Philips phone-ins

THE first two of four Philips EBX 8000 computer-controlled telephone systems have been installed in the BBC's national communications network. This is part of a £1 million project shared by Philips Business Systems, the BBC and British Telecom, and is aimed to make life easier during radio and television phone-ins.

Traffic control

AN Urban Traffic Control scheme costing £500,000 is being installed by Plessey Controls in Southampton. The system is based on a central computer which receives data taken from important roads and junctions, and calculates the best distribution of timings of traffic lights to avoid jams and bottlenecks.

Water contract

FOUR Honeywell computers have been sold to the Bristol Waterworks company for a distributed system that will administer commercial applications and control of water flow. The contract includes a DPS 7 medium-sized computer, two DPS 6 minicomputers, and a Datanet communications processor.

Yugoslav order

ONE of the few Yugoslav computer companies, Iskra Electronics, has ordered $500,000 worth of magnetic tape transports from the US Kennedy Company.

Wims takes off

BRITISH Caledonian, the independent airline hived off by the Heath government from British Airways in 1972, has ordered a £28,500 maintenance package from ABS Computers of Woking, Surrey. The system called Wims was developed by the DHSS and provides a database of cost and performance of buildings, plant and equipment.

Disc subsystem

A DISC subsystem for Apple II and IBM Personal Computer users is being built in the US by Vista, to be sold at about $1,500 each. Vista has ordered $5 million worth of multi-disc floppy disc drives from the Amlyn Corporation of California to incorporate in its new V1200 subsystem.

Cyber sale

CONTROL Data will next install two of its Cyber mainframes for Sun Life Assurance as part of a £1.8 order.

Catered for

MEGABYTE, the supplier of turnkey systems, has won a £70,000 to supply in December control package for British Catering Distributors.

'Women — seize IT opportunities'

by John Riley

OPPORTUNITIES are there for women in computing. But they will slip from their grasp unless women adapt to the restructuring of British work patterns being brought about by information technology.

That was Ken Baker's message to last week's conference on the Impact of Information Technology on Women held at Westminster County Hall.

A less optimistic Shirley Williams argued that we do not know what the effects of new technology will be, and cannot predict them. Information technology has not begun to register yet, she claimed, and argued that job losses so far must be attributed to the recession and to the government.

While Baker conceded that jobs will be lost in manufacturing, he was confident that other industries, especially leisure, will expand, with extra jobs in new areas "such as windsurfing".

An enthusiastic and rose-tinted view of the benefits was presented and these included quieter and cleaner jobs, people working in smaller teams, more opportunities through electronic cabling for women and the disabled to work at home, less importance given to physical differences between men and women in the manufacturing industries, and blurring of sexual stereotyping in the office, with, for example, male managers learning keyboard skills.

Baker thought a widening split between skilled and unskilled jobs in the office of the future was "unlikely".

Williams urged better education in technology for all and proposed a unisex Universal Foundation Training Year in which school leavers would learn to live with information technology. She did see fewer women in management positions in the public sector, and was unhappy about this.

Delegates called for a more humane dimension in discussions of information technology.

Conference organiser Janice Hughes of Small Change, an informal group of women affiliated to Change International, said: "Information Technology Year has been directed towards introducing and marketing electronic equipment, but the people problem has not been tackled."

Hazel Downing, of the University of Southampton's new technology research group, added a pessimistic view by graphically illustrating the misuse of word processors in the US.

The "alternative work culture" where women break their routine regularly in the office would change when they were glued to the controlled environment of word processors.

Downing also stressed that there is evidence that VDUs can be a health hazard and urged the immediate need for proper research in this area.

WILLIAMS . . . "Information technology has not begun to register yet."

Govt gives thumbs up to Alvey

by Donald Kennett

THE first indication of a favourable government response to the Alvey report came from Industry under-Secretary John Butcher last week.

Speaking at a seminar on viewdata and cable television services at the Polytechnic of the South Bank in London, he said: "We are hoping we can use Alvey's report and the four major areas he is asking us to study — together with developments in cable, together with the liberalisation of telecommunications — to produce an explosion in information services."

The four areas are VLSI, knowledge-based systems, software engineering and man-machine interfaces.

"I have great faith in Alvey," he added. "If we pursue his recommendations vigorously, we too can have our fifth generation computer. But add to that the UK freeing of information technology with the value-added network services licence and the rest of the liberalisation programme and we can have a world lead."

Systems house funds Edinburgh AI lecturer

by George Black

AN additional lectureship in artificial intelligence is to be set up at Edinburgh University with a three-year grant from the Hampshire firm Systems Designers.

AI department head Jim Howe said it was hoped that the post would be filled in the first half of next year. The new lecturer would specialise in expert and knowledge-based systems.

The department was formed out of three research groups in the mid-Sixties and was later called the Department of Machine Intelligence and Perception. It was created in its present form in 1974. Now it has four permanent staff.

"We went through a lean period in the early Seventies, but in the last few years there has been a growing recognition of the importance of our work, so that we have been more shielded from the recession than other faculties," said Howe.

He was uncertain whether it would be possible to recruit a British specialist to take up the new lectureship.

Edinburgh has just received its first student intake for a joint honours course in linguistics and artificial intelligence.

"If it is a success we may try bringing in some joint honours options, but we won't know for a few years how well it is going," Howe added.

Next autumn a one-year MSc in information technology is to be launched.

"Of course it was planned long before the Alvey report," said Howe, "but it does seem to coincide nicely with his proposals."

There are 20 research workers in artificial intelligence at Edinburgh, mostly sponsored by research councils, as well as 35 PhD students and 60 undergraduates taking AI as subsidiary subject to computer science, maths, linguistics or psychology.

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NEC Spinwriter 3530

UK firm runs Unix 7 on 68000 micro

by Robert Parry

BRITISH micro builder Bleasdale Computer Systems is redoubling its attack on the emerging Unix market. A 68000 machine running Unix Version 7 is now up and running, ready for delivery within four weeks, according to managing director Eddie Bleasdale.

"It runs a full implementation of Unix," says Bleasdale, "the real McCoy, not a look-alike version." He claims his is the first 68000-based machine in Europe to run a complete implementation, rather than cut down operating systems based on Unix which only give the user a subset of Unix.

The claim is probably fair enough for European machines, reckons Emrys Jones, chsirman of the European Unix Users Group. But he noted that most users did not use all the facilities available within the operating system: "The trouble is they all wsnt different bits, so for a manufacturer it perhaps makea sense to offer a full implementation."

The 68000 machine is a brother to Bleasdale's Z8000 computer running Xenix, the Microsoft derivative of Unix.

It comes with half a megsbyte of memory, expandable tu 3¼-Mbytea, 10 Mbytes minimum of hard disc with floppy or tape streamer backup, and can support aix ro eight users comfortably.

Bleasdale haa £70,000 of orders already, representing four systema.

BLEASDALE . . . "£70,000 of orders have been received."

UEI forms fibre optic TV venture

by Donald Kennett

OPTICAL fibre based cable television distribution systems are to be made in the UK by a joint venture between UEI and Times Fiber Communications.

UEI has already formed a joint venture with the Water Research Centre called Cubletime Installations to run wideband cable networks into homes through sewers. This second ss yet unnamed venture with a leading US cable subassembly supplier will give it the technology to supply complete systems.

The UEI group consista nf Micro Consultants, Link Electronics and Quantel, all of which are involved in high technology for television broadcasting snd other image processing markets. The new venture will add a respected voice to the arguments fur basing the UK's proposed wideband network on optical fibres aod un the swirched star layout.

CMG joins sick pay bandwagon

by John Riley

THE latest software package bandwagon is gathering momentum. Both Peterborough Software and IBM's Bureau Service have been publicising their aolution to relating Statutory Sick Pay (SSP) calculationa to payroll systems.

Last week, Computer Management Group, in collaboration with legal authority Bowes Eagan, announced its MicroSSP package aimed at small businesses which is expected to be ready in January.

Although the legislation comes into force on April 6, the new information has to stnrt being accessed at leoat eight weeks before, with SSP systems installed and running by then. All firma with computerised payroll systems will be affected, so many other software houses are beavering nway to beat the early February deadline.

There ia general agreement that with SSP the front end is 90% of the problem, and that the integration of SSP information, which needa regular updating and has varying time scales, demands more than a aimple amendment to a payroll package.

The general solution is to treat it as a separate personnel function which interfaces to the payroll system.

"The implicationa aod general problems of SSP are far greater than those of VAT," said Jeff Phelps, general manager of CMG. "Thia is a far grearer problem than that, and VAT caused enough problems."

CMG, which diversified into aoftware last September, is promoting MicroSSP as an absence control system. Thia can be bought for use on customera' own micros (only those with a CP/M operating system) at a cost of £750, or used by those running their payrolls with CMG at a cost of £1,000 including £500 installation.

CMG ia planning a second [illegible] uf software development to [illegible] a general purpose system to [illegible] late Occupatiooal Sick Pay, [illegible] will eventually interface [illegible] MicroSSP.

Peterborough Software offe[illegible] producr to mainframes and [illegible] has ooline capability for their [illegible] systema, which was demo[illegible] to the DHSS last week. SSP [illegible] lations are treated as a [illegible] requirement operating [illegible]

IBM Bureau's system offer[illegible] calculating options: SSP [illegible] factor; gross SSP payment [illegible] SSP paymeot; and fully integ[illegible] SSP and payroll. A calendar [illegible] ity is also available to [illegible] SSP qualifyiog days.

IBM stressed that this [illegible] bureau solution and would [illegible] whether it is producing [illegible] version package for IBM [illegible] clear indication of extra [illegible] SSP was available from Peter[illegible]rough or IBM.

Private exchange to test govt's telecoms liberalisation policy

by Donald Keonett

SMALL Systems Engineering is to test the limits of the government's liberalisation policy for telecommunications by launching a private telephone exchange later this month — eight months before its supply ceasea to be the exclusive privilege of British Telecom.

Managing director Derek Rowe said: "We needed an exchange for up to about 40 internal and 12 external lines for our premises and everything on the market was rubbish and grossly over-priced.

"So we started designing our own eight weeks ago — it is called the Empire 32 — and the first deliveries will be in two weeks.

"Up to 100 non-approved PABXs are installed every month in London and BT doesn't do anything about it," he added. "The market ia ripe, BT's equipment is over-priced and there is no wny a Conservative government is going to stop it."

From rhe beginning of rhis montb is ia an offenee to sell equipment which could be attached to BT's networks unless it carries the official label sayiog whether ir has been approved — a green disc for yes and a red triangle for no. BT ia entirled to disconnecr any subscriber using unapproved apparatus on its network.

A BT spokesman said: "Very few subscribers have setually been disconnected because they usually see the force of our argumeots and atop using the equipment on the public oetwork. There is nothing to stop aupplicrs from preparing to enter the market, but there are no atandards to test their equipment against yer."

Rowe claims to have lined up 20 orders already, some of them from his company's suppliers who have seen the prototype when they made salea calls.

The first deliveries will go to Teleterm, a London-based retailer which in the last year claims to have sold 50 of its Ideal range of Taiwanese-built exchanges for five to 10 outside lines and 10 to 30 extensions.

Teleterm managing director Emery Lake said he was dropping the larger models of the Ideal range in favour of Rowe's system because it was easier to keep a local manufacturer informed of user needs. "We collaborated on the specification, so what he's making is what I want," he said. "It uses two-core cable as opposed to 22-core and it has more facilities."

Lake says that the [illegible] systems have been runnin[illegible] the full knowledge of BT [illegible] without a single disconnect[illegible] ing threatened, so he expe[illegible] problems with the UK [illegible] systems.

Rowe's Empire 32 is said [illegible] less than £200 per extension [illegible] pared with more than [illegible] extension for BT's system [illegible] the Herald. Features [illegible] unusual include its ability [illegible] rttn without a console by [illegible] incoming calls on to any [illegible] extension, to have traffic [illegible] nostic logs output to s printer [illegible] der the control of any exte[illegible] and its ability to set up confer[illegible]

ROWE . . . "The market is ripe"

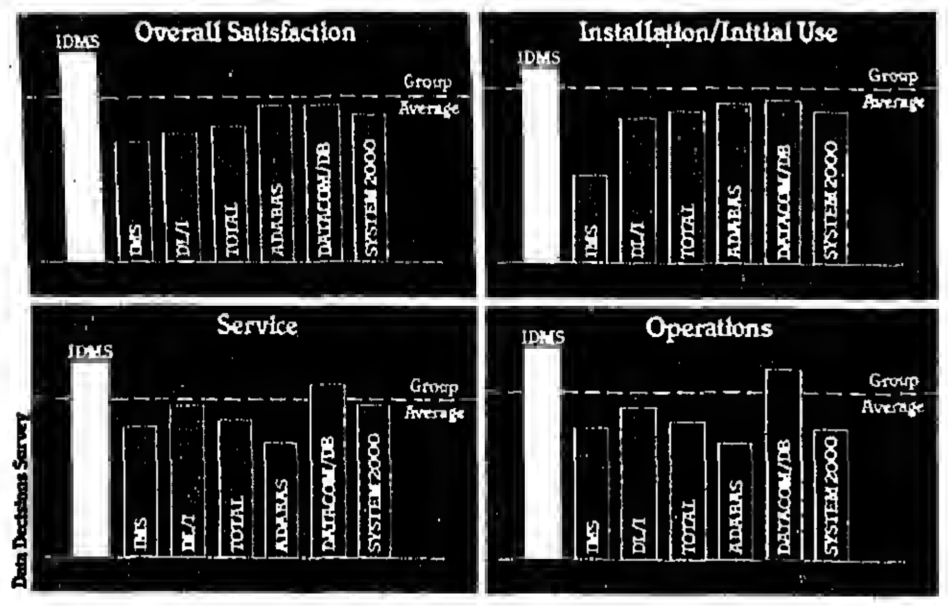
calls for any number of exte[illegible] and outside lines. It is also [illegible] into a 20 by 15 by six inch [illegible] contains oo cooling fans and [illegible] under anybody's desk, acc[illegible] to Rowe.

"I'll be disappointed if we're [illegible] moving 40 to 50 e month by the middle of next year," said La[illegible] "because it is a huge market [illegible] is totally unfulfilled in any prac[illegible]cal sense."

A number of sophisticated [illegible] matic exchanges have been [illegible] able for many years for comm[illegible] nicationa within one company [illegible] the only thing that has prevented their being attached to the public telephone network has been BT's exclusive privilage to supply systems for attachment to its network.

These systems, available from suppliers such as Philips and Ple[illegible]sey, should be among the first to gain approval when the market for PABXs is officially opened up next July.

Enough said.



Data Decisions' 1981 aurvey shows Cullinane's Integrated Database Management System (IDMS) to be the Number One choice among DBMS users. Yet again, IDMS has echieved higher ratings than any competitive product in the categories of reliability, ease of installation and use, quality of technical support and overall satisfaction. Additionally, the latest Datapro Research aurvey shows IDMS to be No. 1 in more categories than any competing database management system.

What does it mean? It means that IDMS continues to live up to its name for high performance and ease of use. That the quality of our documentation and training is second to none. And that our customer aervice is faster and more thorough than any other aupplier's.

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Who agrees with them? Wall Street. Cullinane is the first ever software supplier to be quoted on the New York Stock Exchange.

Investment and commercial success has enabled Cullinane to go on securing the confidence of its users. By ploughing back e higher proportion of e higher revenue into R & D than any other independent aoftware supplier, Cullinane has consiatently invested in akill. The result is the most complete information resource management tools available to IBM users.

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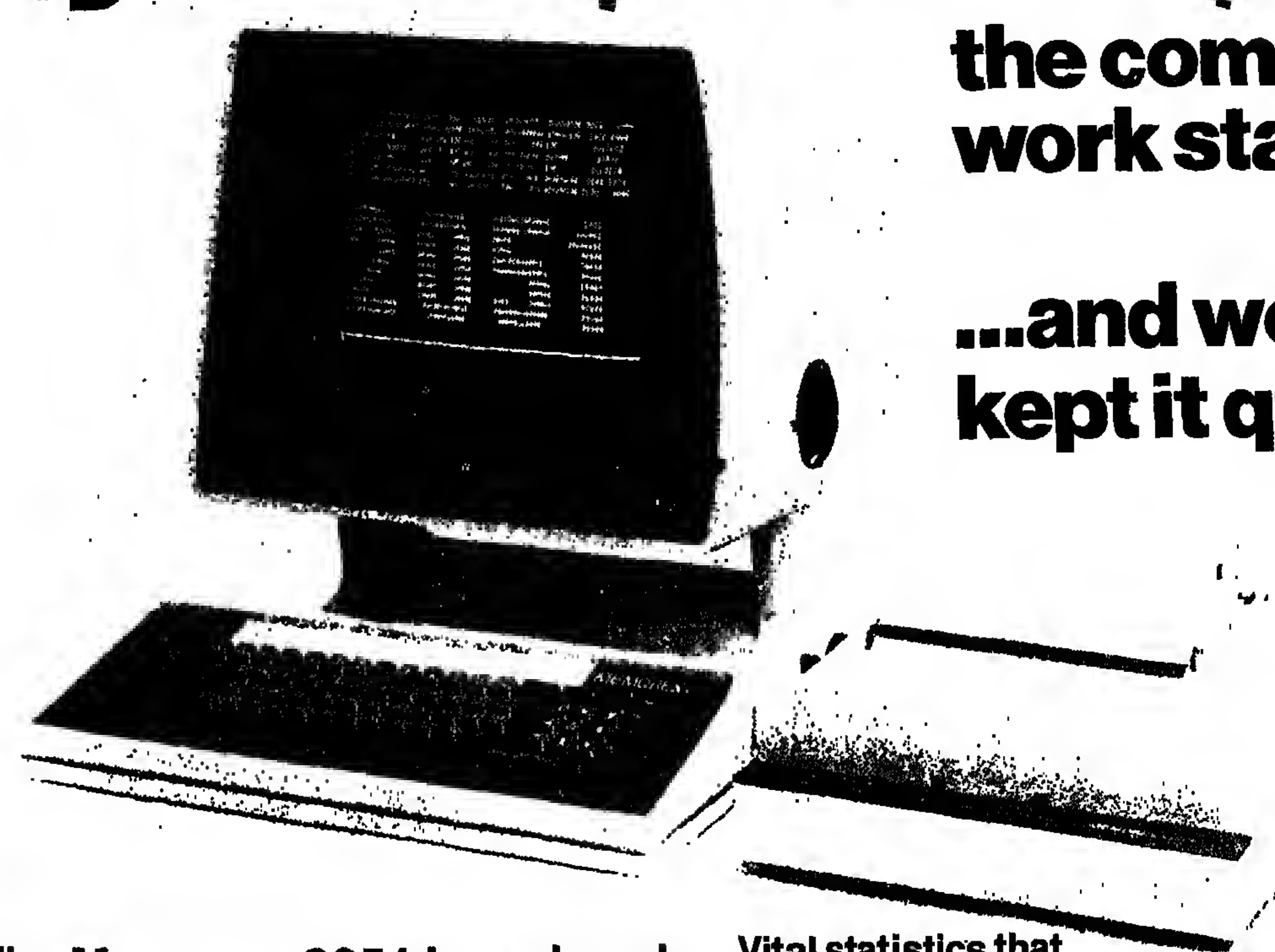

The Memorex 2051 has already proved itself as the most advanced display available for S34/38 users. Now, with the addition of the 2053 Copy Printer, Memorex offers an unrivalled combination.

The 2053 is a compact, lightweight, quiet (thermal) printer that attaches directly to the 2051 – no extra twinax port needed. At about one third the cost of a standard printer, the 2053 provides a fast, on the spot, hard copy of the display data.

Vital statistics that are so impressive the competition obviously have trouble measuring up to them

FEATURES	5251-11	5291	2051
Cable Through	OPTIONAL	STANDARD	STANDARD
Full Size Screen	YES	NO	YES
Tilting Monitor	NO	YES	YES
Non Glare Screen	NO	YES	YES
Auto Dimming Display	NO	NO	YES
Line/Block Cursor	NO	YES	YES
Line/Column Indicator	NO	YES	YES
Desk Space	MORE	LESS	EVEN LESS!
Copy Printer	NO	NO	YES

More from Memorex

Contact Phil Astill, Communications Products Marketing Manager, Memorex UK Ltd., 96–104 Church Street, Staines, Middlesex, TW18 4XU. Telephone Staines (0784) 51488.

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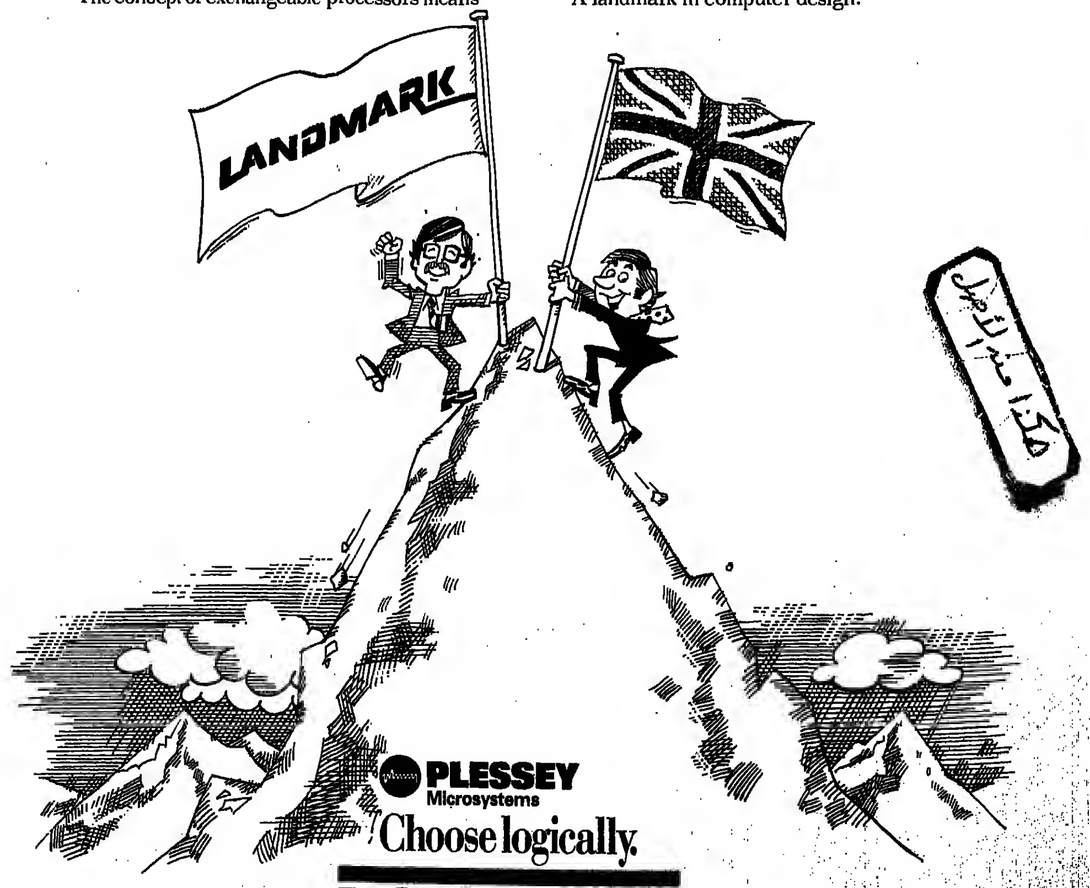
A landmark in computer design.



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Bridging the gap with banking

by George Black

A LONDON conference in January will bring together financiers and software chiefs to try to bridge the gap between banking and programming.

"The trouble has been that finance people don't understand bytes and software people don't understand loans," said David Else, manager of the Software Products Scheme.

The scheme, sponsored by the Industry Department, the National Computing Centre and the Computing Services Association, had a £10 million cash injection from the government six months ago which the organisers say will all be used up by next year.

"We shall very probably have to go back to the government for more cash before the next general election," said Brian Cudby, of the Computing Services Association.

The number of applications for government grants — which can cover up to a third of the cost of a project — has doubled in the last six months and, although the organisers have drafted in three extra staff to handle the vetting, it takes four months for approval.

"We know that applicants aren't satisfied with this delay and we are hoping we shall be able to reduce it next year," said Cudby.

The job appraisal scheme, which gets its first public airing at the January gathering, will enable innovators, backers and officials to thrash out worthwhile plans from their outset.

Most of the bright ideas being put forward now concern microbased systems. Far fewer are in the other "preferred areas" of CAD/CAM (computer-aided design and manufacture) or program development aids.

So far 29 projects have been accepted and 14 rejected as not up to scratch, although within the required areas of research.

Cudby and Else believe some of those accepted may end by superseding software already on the market or being advertised.

"We know that everything here has undergone rigorous investigation before launch, which can't always be said of existing packages," said Else.

Applications envisaged were wide-ranging, from accountancy to building site management. Many of them highlighted the advantages of decentralising data, such as for dentists' appointments, patients' records or estate agent's branch offices. Some involved linking mainframes to micros, for instance for stock control.

"There are half a million companies in this country that might take up these ideas, so it's a huge market," said Else.

CUDBY . . . "We shall very probably have to go back for more cash."

Burroughs not put off by import warnings

by Jack Gee

BURROUGHS plans to continue to import computers from Britain for the French market, regardless of French government warnings that firms which manufacture in France will be given preference over those which sell foreign-made equipment.

A senior company official said: "We do not consider we fall into the category of companies which only maintain marketing operations in France and fail to provide jobs for French industry."

Burroughs brings in computers from Britain and Belgium as well as US and re-exports over 22% of these, principally to North and West Africa.

The American multinational employs 2,000 workers in France including engineers and operatives at three factories in a triangle centred around the Rouen area in Normandy.

Terminals are produced by a staff of 400 at Rouen and 160 at Louviers operate a print firm, where perforated paper for computer line printers is manufactured.

A third plant at Le Vaudreuil provides jobs for 130 workers, who have been producing software packages since the end of last year.

The Burroughs official said: "We have been operating in France for the past 75 years and never moved out, not even during the two World Wars. We even have a 1922 letter from the French Inland Revenue reminding us we owed taxes for 1919!"

The Burroughs official added: "We are very keen to play a bigger role in France's information technology industry. But we have no plans for the time being to make computers here. We shall be concentrating on existing activities."

READ . . . pointed out that German market was by no means wide open.

Butcher attacked over 'favouritism'

by George Black

INDUSTRY Under-Secretary John Butcher came under fire from computing big shots at a recent lunch party in the House of Commons.

The minister, in a most enthusiastic speech, had declared that protectionism was a thing of the past and had squashed any ideas that British-owned companies would receive preferential treatment from the government.

He went on to wax lyrical about homegrown software, which, he suggested to guests of the East Midland Allied Press, was set fair to take over the European market.

However, some guests responded rather negatively to his exhortations. Up jumped Sperry Univac's Bill Read and pointed out that the much prized German market was by no means wide open, as the Germans tended to translate everything into their language.

Butcher was also pressed to explain how he squared the free trade gospel with favouritism shown to three firms in the educational computing field.

Clive Sinclair then waded into the fray to express his disapproval of any such favouritism — even though admitting it could work out to his advantage sometimes — and went on to bemoan the fact that he had not been able to buy British chips.

At this point a slightly flustered minister was glad to be able to say that he had urgent business elsewhere in the building, and left.

Butcher had spoken of "mega-opportunities" for British technological skills and stated the government's intention to provide "an environment in which this country can do what it's good at".

Owing to his sudden exit his critics were not able to debate with him whether that should have been "mini-opportunities" — or "micro-opportunities."

IBM memory firms in for a struggle

by Howard Karten

IS THE IBM-compatible, add-in memory business about to fade from memory?

Add-in and add-on memory created widespread interest in 1979 and 1980 by users seeking to save money, but last year saw little market growth, and now, some industry figures believe, manufacturers of IBM-compatible, add-in and add-on memory may be in for troubled times, at least for the short run.

A good deal of the problem was caused by IBM's aggressive price reductions on memory that took place in the US in mid-August, and add-in memory makers have been hard pressed to compete.

The irony is that now that most of the technological bugs have been worked out, and initial user resistance overcome, many customers seem reluctant to take advantages of only modest savings — especially if, by doing so, they will potentially add to their headaches with problems such as running a multi-vendor shop.

In addition, 1982 has hit the entire DP (and semiconductor) industries hard, with lay-off announcements and plant closures becoming almost routine weekly news. These have further affected the fortunes of plug-compatible memory makers — despite the view by some observers that additional memory is one of the most cost-justifiable purchases DP managers can make.

Tom Palfi, president of add-in memory maker Locom, explained: "In the past year, the add-in memory market for the 370/158 and /168 has been slowly eliminated, there has been a slowdown in the 3031 and 3032 systems, and business has been concentrated in the 3033."

In Palfi's view, IBM's August move, dropping the price of a four-Mbyte chunk of 3033 memory to $64,000, "has virtually eliminated this whole marketplace."

Locom's sole product at this point is its LCM-300 add-in memory. Thus Palfi said, his firm has been hard hit, even though it sells add-in memory for approximately one-half IBM's price. The problem is that the potential saving of $32,000 is insufficient to justify the potential problem of dealing with two suppliers.

The two biggest memory vendors, outside of IBM, are probably Locom and Cambex, a Waltham, Massachusetts manufacturer of add-in memory for IBM systems. According to Cambex sales vice-president George Saupe, 1982 probably represented a transition year, in that before 1982, the 370/158, /168, and 3031 were still seen as having enough residual value to justify putting more money into them.

However, for this and coming years, the drop in value of that hardware, both in absolute terms, and in price/performance, makes other options more attractive to users seeking greater value.

The long-term outlook for memory is limited, according to technology analyst Harry Edelson of New York stock brokerage the First Boston Corp. "It's a limited market now for vendors because of the low prices, compared with what it used to be, and because of IBM's ability to ship massive amounts of memory.

"There is always a niche, and there's a niche for smaller companies . . . The question is, can these smaller companies keep growing."

However, next year could be significant for IBM 3081 users, predicts Cambex's Saupe. His company will be introducing a 3081 add-in memory.

Control Data is similarly optimistic. "We're finding that memory is an easier sell, because 30% to 40% of IBM CPUs already have independent memory," said Michael Gluck, vice-president for Peripheral Systems Marketing for the Minneapolis mainframer. Like Locom and Cambex, CDC sells add-on memory that takes some IBM CPUs beyond the memory limits provided by IBM.

Israeli manufacturer opens in Paris

by Jack Gee

EXATEC, the Israeli computer firm, has added a French base to its Belgian headquarters for Europe to mark the advent of a new generation of IBM-compatible products.

Eddy Sterngold, joint managing director, said at the opening of the new Paris office that this French capital had been chosen because France possesses the biggest range of software houses and service bureaux of all Western European countries.

Jean Nicholas Clerc, commercial director for France, said: "The market lacked a system to enable software houses to maximise their efforts. I believe Exatec/France will succeed with the support of French software firms who wish to develop new markets."

Exatec's research and development began in 1978 in Israel with the target of creating a computer which would be software-compatible with IBM's S/32 series — and especially with S/34 — and programmable in RPG2.

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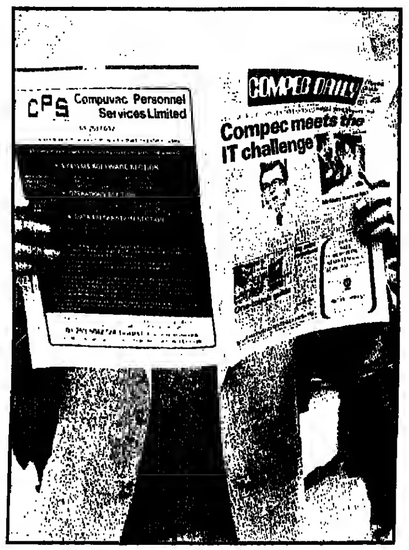
Professionals are out in force at Compec '82



This year's Compec innovation, the Daily, and reader.

THIS year's Compec is marked by an exuberant professionalism. A few of the old guard are heard complaining about a lack of colour and flair, but most of them have repeated the same refrain for the past five or six years.

For the colour is still there. It is only slightly concealed behind well-thought-out marketing strategies and high-quality stands. And the last-minute panics have been the result of careful planning pulled off successfully.

Io Software Village, Phil Gowlson of Advanced Software Technology was showing off a bit of hardware. He had just walked off the plane from Atlanta, Georgia with a working model of the Compucase portable computer, which is briefcase sized (only 5½ inches thick), in ooe hand, and the EEC distribution rights to marketing and manufscture of the system in the other.

His main comment was that be was jet-lagged, but be quickly added that he planned to sell 5,000 of the machines this year in the UK and Europe. As we chatted, he was busily cbecking to see that the micro had survived the trip without some glitch or jet-lag of its own.

Trend's stand featured a Puma (stuffed) to draw attention to the Telex terminals that the company makes for British Telecom. Chris Huxtable said that as yet they had oot bad any complaints from the Wildlife Liberation Froot and that it had appeared before.

Fungus, the offshoot of minimaker Systime, belied the complaint that there were oo flamboyant stands. Their mushroom pillar and command post gave them a butterfly's view of the Grand Hall and one that was only equalled by the lounge-in-the-air of the Digital Equipment stand.

Neither company would comment on whether or nnt this was a conscious exteosioo of the friendly rivalry of the two companies, and the term "coincidence" was bandied about witb varying degrees of sincerity.

At sister publication *Computer Talh's* stand a minor queue was forming to key ioto the talking computer and take a chance oo the quiz programmed oo the Apple by Lancashire-based Pete and Pam Computers.

Last year a similar machine guaranteed a small crush opposite the Gents' and just down from one of Olympia's many meeting places or bars.

Not content with the seven or eight watering holes in the Grand Hall, Lambart Computers set up their own pub on their stand, but we have so far been uoable to reach it during opening hours.

A similar ploy was tried by Data Packaging. Unable to join the 350 plus exhibitors at Compec because of lack of space, the company decided to do the oext best thing and took over the first floor of the oearest pub to Olympia, the Hand and Flower.

As this is the favourite hauot of those Compec visitors suffering from exhibition lag, it is likely tha the company will get a fair numbe of visitors.

But the company is determined to make it into the shelter of Olyo pia next year.

The same applies to the Frenc Five software companies whic were slightly tardy in booking fo Compec this year have set up down the road io the Royal Kensingto Hotel and are equally determined to be first in the queue in 1981.

The exhibition this year has its own daily paper, a light-hearted but serious record of the events a the show and one which has b come obligatory reading for ex hibitors and visitors. I ovedeel ooe of the standard Compec ques tions — which ran something like "What do you do when you get the function set to zero?" being an swered with a straightforward ges from an engineer hiding behind the daily.

■ In last week's Stand Guide next 4214/5215 was wrongly labelled. It should be John McNulty Limited.

Next year – bigger again!

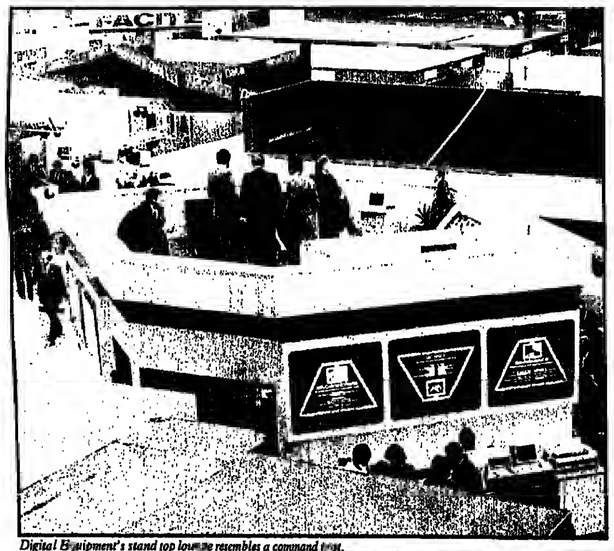
NEXT year Compec '83 will take over the whole of Olympia as software will be able to come in from the cold.

For this year Software Village expanded so much, from just over 30 exhibitors last year to over 5 now, that it needed its own ha This is the temporary Polytec Hall, to the rear of Olympia largest space, the Grand Hall.

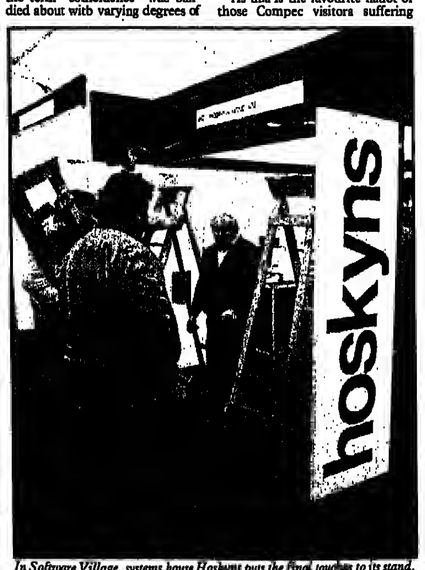
The expansion into the Natio Hall, which is currently the ch place for India's industry and pr ducts, will give Compec '83 a gr ter more space: 10,000 square me compared with this year's 8,00 And it will give next year's Soft ware Village exhibitors room to their own in the Grand Hall.

The industry's UK showplace has grown at the same speed as the industry itself. Compec started in the early 1970s with a small area in a Loodon hotel. By 1976 the de mand for space for exhibitors and for visitors to breathe meant that it took over the Wembley Confer ence Centre, and only two years later it was forced to move to Olympia and the attendance figures jumped to 29,000.

By 1982 attendance had bounced up to 32,000.

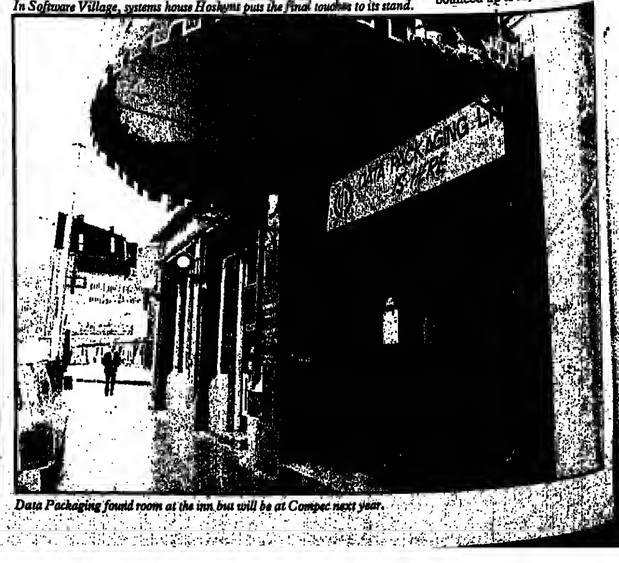


Digital Equipment's stand top loser resembles a command post.



In Software Village, systems house Hoskyns puts the final touches to its stand.

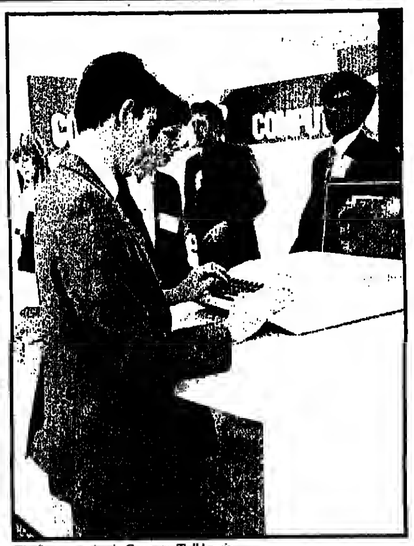
Lambart brought its own pub and menus.



Data Packaging found room at the inn but will be at Compec next year.

Colour, flair, and careful planning

With over 350 exhibitors, Compec '82 is aiming to attract almost 40,000 computer professionals.



The first competitor in Computer Talk's quiz.

US disc-maker Shugart resorts to an English flower-girl.

Fungus brought its own mushroom, as well as a fountain.

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COMPANY NEWS

Rocky road has brought NMW to formal quote

Managing director Johnson . . . "We will be looking for acquisitions."

"WE will be looking for acquisitions," was the declaration made by Brian Johnson, managing director nf cash-rich NMW, as the company formally prepared to join the Unlisted Securities Market.

The road to a formal quote has been a long and rocky one for the service company. It began almost two years ago to the day, and cost the company around £25,000 in additinnal legal costs.

This was partly nwing to changes required tn bring NMW's legal status into line with Stock Exchange requirements, and partly to a rearguard action by o group of shareholders who insisted on a share handout to compensate fnr the loss of exclusive voting rights nn their shares.

NMW was originally set up as a stockbrokers' cn-nperative tn provice o stock transactinns handling service to brokers using the old Northern Exchange in Manchester. Only fnunding sharehnlders, of which there were 350, had voting shares ln the company.

Over the profitable years nf NMW's existence the number of shares has increased substanrially, and the proportion of founders' shares tn new shares was something like one for every 7,000 new shares.

The Stock Exchange now requires that all the shares in a company have voting rights, so one year late, £25,000 down and one acquisitinn lost, NMW is a quoted company. (In the past, NMW shares have been traded under the Stock Exchange Rule 163 (2) which requires specific permission fnr each deal made).

In the prospectus supplied by brokers A. E. Sharpe and Cn, there is nn profit fnrecast. But the profit for the half-year ot £305,000 is exactly on budget according tn chairman Brian Bibby. He remarked that traditinnally NMW does better in the second half.

NMW derives its revenues from deals in shares and stocks done by brokers on behalf of clients. Since 1972, when the company was founded, its shares of Stock Exchange business has risen from 8% of bargains, to 37% currently.

Johnson said that the company's twin ICL 2972s could actually cope with 50% of the Stock Exchange transactions, and in an elliptical phrase he said that NMW's share of the SE business could be much larger, "if certain things happen".

Bibby and Johnson freely admitted that they had been taking an increasingly larger share of a declining market, at least in terms of the number nf brokers in existence. Bibby pointed out that of the 54 fnunding brokers on the NMW system, nnly 28 were still trading.

Bnth tactfully refused to discuss the competition, hut there were unconfirmed rumours about two years ago that NMW's principal rival, NatWest Banks' Centre-file, was on offer to takers. At the time Centre-file was in the process of building a real time system similar to the capital system produced by NMW. Centre-file subsequently cancelled the project.

NMW's track record

	1977	1978	1979	1980	1981	1982 (E)
Profits	£415,603	£253,712	£363,444	£505,220	£544,933	£650,000
Turnover	£1,468,712	£1,621,497	£1,797,344	£2,118,156	£2,358,911	–
Proportion nf total Stock Exchange bargains	22.1%	24.5%	29.1%	28.9%	33.6%	37%

At the half-year NMW had on loans or overdrafts and over £1 million nn deposit with banks.

Data General is better off than it looks

A LOSS fnr the first quarter and a slow first half is how analyst Peter Labe sees thc pattern at Data General.

However, Labe, based at stockbrokers Smith, Harris, Barney, Upham, is still fairly optimistic about the overall prospects at one nf the industry's leading mini makers. He says: "Based on products already snnnunced plus expected enhancements and additional prnduct releases, we consider Data General to bc in a far stronger positinn than the current level of sales and earnings suggests."

Lass year DG's turnover rose to $806 million from $737 million on the previous year, but profits, nn a rising trend for several years prinr to 1981, fell further from $55.7 millinn in 1980, through $40.8 million in 1981, to $19.19 millinn fnr 1982.

Labe attributes this erosion nf profits tn a series of events, beginning with the perception by DG that a long-term position as king of the 16-bit OEM mini would not be desirable. The company had to broaden its markct base, redirect and teorient sales, become more end tser oriented, and reorganise its management structures.

The process has lasted several years, Labe continues, in which there has been extraordinarily high turnover in the sales force, major and costly expansinn in service, and a rather large number of executive departures.

He believes the turmoil should now be subsiding.

Apart from the recovery in management stability, Labe also paints an interesting picture of the likely direetion produet development will take at DG.

"In the Eclipse line, two 32-bit processors have been in production with a third expected to be announced sbortly (see story page 56), and two microprocessors in Eclipse architecture have been introduced in the scientific market and in the small business line.

"We anticipate more and mnre micro Eclipses," Labe continues.

In time he expects the older Nnva (16-bit) series to be phased out. With the book about the design nf the Eclipse, The Soul nf a New Machine, about to be made into a film, DG seems to have the blessing of Hollywood as well as the money men behind the recovery.

Porn pulped—plus other company secrets

AN ex-police commissioner's company has an insatiable appetite fnr hard-cnre pornography – and computer output.

Sir Robert Mark, fnrmer Metropolitan Police cnmmissioner, is a director of Data Destruction, a new venture cnncerned with the tntal destructinn of unwanted printed matter.

The Metropolitan Police has a problem in that, althnugh there are a large number of obscene publications in London awaiting distribution, it is impractical to mulch them because the boys in blue have run out of stnrage space.

Data Destruction now offers a guaranteed tntal pulping service which nnt nnly helps the Police dispose nf a ton of porn an hour, but will also benefit computer users whn need to dispose of company confidential material.

Data Destruction provides a "completely secure" service.

The cost of the service starts at £80 per hour.

The NEB almost makes a profit . . .

THE National Enterprise Board, a major element nf the British Technnlogy Group, is intn profit fnr the first half nf fiscal 1982, and fnr almost the first time ever; sort nf.

Nn, we are nnt being sarcastic.

The statement from the NEB says that, the nrganisation "made a before tax prnfit nf £1.8 millinn fnr the first six mnnths nf the current financial year, compared with a loss nf £0.3 million, on the same basis, in the corresponding period nf 1981."

The next part nf the stotement says that "the board's interim statement fnr the six months to June 30 also shows a substantial reductinn nf losses in the board's consolidated accounts on year earlier figures."

This is fnllowed by a statement which says that "this year consolidoted losses, befnre taxation and extranrdinary items nf the NEB and its subsidiary companies, including the share nf lnsses nf associated companies, fell tn £5.1 million. In the corresponding period nf 1981 losses on the same basis amounted to £11.9 million."

Put in simple English, which the NEB ought to have done on behalf of its nwners, the taxpayers, what it all means is this. The NEB is a holding company, which makes investments, and receives income. On that basis the NEB made a working surplus of £1.8 millinn.

However, under current company law the hnlding company must sbnw the effect of the profits and losses in its holdings in associated and subsidiary companies, on its nwn accounts. Hence, the £5.1 million loss.

Most of this loss arises as a result of the operations of one company: Inmns.

Without the accelerating losses at Inmos, running at £10.4 million this half-year compared with £5.4 millinn fnr the first half of last year, the NEB, taking all its companies into account, would have made a prnfit of nver £5 millinn.

As revealed earlier this year, the biggest volume turnover company in the NEB portfolio, Data Recording Instruments, is now intn a useful trading profit of £0.4 millinn, compared with a lnss nf £1.1 million at the same time last year.

As well as making a trading profit, the company has been totally reorganised and has a reliable nrder book. There will be a substantial addition to profits from the sale nf the Decision Data warrant, not to mention dividend income and profits from the $9 million printer nrder DD bas placed with DRI.

Only two NEB companies, Inmos and Aregon, are making lnsses of any consequence.

Aregon's losses, in line with the trend in the NEB accounts generally, have fallen from £0.9 million pounds tn £0.7 million. Turnnver has remained static at £2.5 million.

In terms of the operating situation at the NEB, Sir Frederick Wood has achieved a remarkable transfnrmation, and so have some of his subordinates.

The new team at DRI, under the blunt and energetic leadership of John Armstrong, have had great good luck in their US investment, and have turoed the shapeless and often apparently directionless efforts of DRI into a cobereot and profitable pattern of trading.

Nn doubt Armstrong and his team would be the first to say they have not got there yet. But they have got further down the road than mnst of their predecessors.

Which brings us to a full stnp in front nf Inmos, gning intn its sixth year with minimal turnnver and accelerating lnsses. It is, by cnnventinnal industry start-up nnrms, about three years late in terms nf ramped-up volume productinn nf chips.

Inmos is suffering accelerated losses at a time when mnst US and Japanese companies in the same business are into mature profits. Sir Frederick Wood has confirmed that the company needs abnut £50 million tn become a viable international chip maker.

He implied that he was going about the task of raising that money privately, because nf a government policy whicb has now closed off all possibility nf further public funding.

The private sector bas resolutely refused, in both the US and the UK, to look at the idea of funding Inmos. According to bankers and brokers in the UK, the failure to move at least into a break-even position two years ago was good enough cause tn say no.

And yet Sir Frederick persists at his increasingly quixotic task.

. . . and sells a stake in a success

ARMSTRONG . . . architect of the deal, and DRI's chief negotiator.

WITH Inmos doubling its losses, the hattered BTG still had something to be proud of in US-based Decision Data. But the Group has sold its potential stake back to the American company.

Last week CW reported that Decision Data, in which the BTG via Data Recording Instruments had a 14% stake, with a warrant to buy 25% of the shares in the company, had dramatically increased both profits and turnover.

For some time Decision Data's president and chief operating officer Dick Schineller, whn is largely responsible for tbe turnround at DD, has beeo trying to persuade the BTG to sell the warrant back to him.

According to sources in DD, confirmed by the BTG, Schineller was facing difficulties in raising equity funds in the States because nf the effective 40% stake controlled by DRI.

With rising growth in sales of 57%, Schineller was more than anxious to capitalise on one of the better recovery situations in the US and equally keen to take advantage of the good market in shares recently.

After some reportedly hard bargaining the BTG via DRI agreed to a price of $4.2million for the warrant. Decision Data will also repay a $7 million loan to DRI.

This still leaves the BTG with 14% of the DD stock, 720,000 shares in all, valued at $5.78 million against o purchase price of around $1.5 million.

Taken with the $4.2 million received for the warrant, interest nn the loan and the very cosy marketing deal wnrked out between DD and DRI, the whole investment exercise looks set to net DRI and the BTG between $8 and $10 millinn dollars profit.

The architect of the deal, and the chief negotiator for DRI is underatood to be the DRI group's managing director, John Armstrong, who was responsible for DRI's recent restructuring.

SHARES TABLE

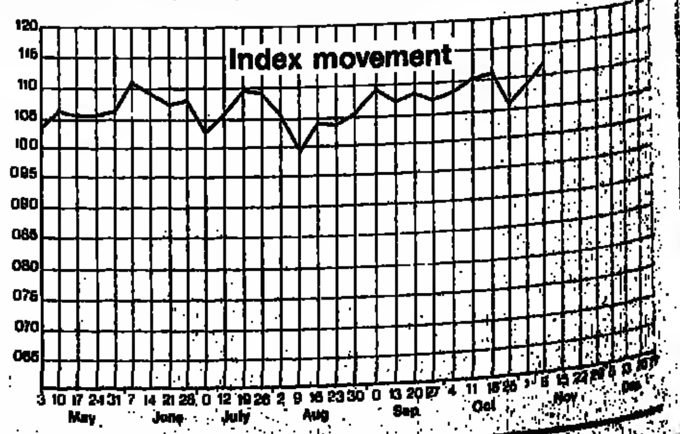
The shores table, which is specially compiled for Computer Weekly, [illegible] selected computer companies that reflect the state of the computer industry

Date 12/11/82 Index 112.29 [illegible]

Pence 1982 High	Pence 1982 Low	London Stock Exchange Stock	Pence Price	Pence C'nge
238	181	ACT (App Com) (35p)	238	+11
198	150	BOC Int. (26p)	197	+10
41½	18	B. Bov Kent (26p)	41½	+2½
129	181	Chubb (20p)	114	+8
120	48	Cole Group (25p)	120	+30
303	180	C.A.S.E. (20p)	199	+18
730	445	De La Rue (25p)	868	+100
350	235	Extel (25p)	265	–22
494	312½	Ferranti (50p)	489	+32
249	169½	GEC (25p)	234	–15
76	33	ICL (25p)	72	–2
47	29	Kalamazoo (10p)	39	+4
328	223	Koda Int (25p)	328	+18
318	318	Memec (10p)	305	+7
192	118	Muirhead (25p)	182	–
384	218	N'market (1981) ($.05)	384	+82
820	670	Norsk Data	736	+70
478	288	Office & Elect (25p)	300	–
628	446	Philips Lamp (f10)	628	+18
637	348	Plessey (50p)	632	+32
87	20	Quest Auto (10p)	48	+0
605	353	Racal Elect (25p)	594	–5
293	171	Rediffusion (25p)	280	–18
468	380	Thorn-EMI (25p)	448	+23
93	74	UC&T (50p)	80	+3
		OTHER MARKETS*		
90	62	Bus Comp (10p)	85	–
208	78	Consult (C&F) (10p)	200	+8
190	180	Int'europe Tech (20p)	190	+2
262	245	Io Tech (25p)	252	+2
86	40	KnigM (5p)	48	–1
160	113	Miles 33 (10p)	138	–2
176	85	NMW (£1)	160½	+10½
128	43	Rolfe & Nolan (10p)	124	–2
120	78	ScanData (10p)	85	–5
258	180	Star Comp (10p)	245	–
165	90	Trident Comp (10p)	95	–
112	78	Zygal Dyn (5p)	85	–

$ 1982 High	$ 1982 Low	US Stock	Price	C'ge
33	18	Amdahl	37	[illegible]
31	11¼	Apple Inc	31	[illegible]
32½	21	Auto Data Pro	32½	[illegible]
46¾	30½	Burroughs	[illegible]	[illegible]
15½	7¾	Comp Auto	15¼	[illegible]
19½	11¼	Comp Sciences	13½	[illegible]
18½	9½	Comshare	12	[illegible]
61½	22	Control Data	41½	[illegible]
39½	21½	Cray Research	39½	[illegible]
63¾	20¾	Data General	42	[illegible]
48½	11¾	Datapoint	23	[illegible]
23	10¼	Dataproducts	32	+1
107¾	82¼	Digital Equip	107¾	+1
48¼	19¾	Elec Data Sys	[illegible]	[illegible]
8½	3½	Gen Automation	[illegible]	[illegible]
38¼	22	Harris	39	[illegible]
70	38¾	Hewlett-Packard	70	[illegible]
103¾	61½	Honeywell	103¾	[illegible]
40	20¼	Intel	40	[illegible]
88¼	57	IBM	[illegible]	[illegible]
88¼	38¼	Litton Ind	[illegible]	[illegible]
19¼	9¾	MDS (Mohawk Dl)	[illegible]	[illegible]
30¾	18	MSA (Mgmnt Sci)	12½	[illegible]
15¼	7¾	Mngmnt Asset	12	[illegible]
12	6¾	Modulas	[illegible]	[illegible]
88¼	60¾	Motorola	[illegible]	[illegible]
24½	14	National Semi	[illegible]	[illegible]
88¾	40½	NCR	[illegible]	[illegible]
39¾	17¼	Perkin-Elmer	[illegible]	[illegible]
37½	15¼	Prime	[illegible]	–
49½	29¾	Raytheon	[illegible]	[illegible]
28¼	10	Signal	[illegible]	[illegible]
34	21	Sperry Corp	[illegible]	[illegible]
34½	15½	Storage Tech	[illegible]	[illegible]
30½	15¼	Tandem	[illegible]	[illegible]
50¼	23¼	Tandy	[illegible]	[illegible]
138½	70¾	Texas Inst	[illegible]	[illegible]
27¼	12½	Tymshare	[illegible]	[illegible]
62½	25½	Wang Lab B	[illegible]	–
12¼	7½	Wyly	12	

The table shows the closing prices in London on Friday and in America on Thursday. The Share Index is based on the prices of the UK companies in the table. Highs and Lows have been adjusted where necessary.
**Shares traded on the Unlisted Securities Market or under Rule 163(2)(a).*



Company News is compiled by Kevin Cahill

SOFTWARE FILE

Emphasis on visitor-friendly displays and user-friendly service at Wembley exhibition . . . . George Black reports

Integration the theme at Expo

Exhibitors made far greater efforts to attract users to their stands at this year's show.

INTEGRATION was the name of the game at Software Expo. Exhibitors at Wembley made far greater effnrt to attract attention tn their stands this time. The emphasis was on making displays visitor-friendly, and their service to the client user-friendly.

At one extreme was Pansophic which had a flashing robot putting on a Father Christmas act for passers-hy. At the other a crowd was drawn by a television wlich happened tn be showing a rugby match.

But where serious business was being talked the word most heard was "integration".

Cullinane is buying out Computer Pictures. Cullinane's Vic Mnrris said this mnve would help to integrate oll their systems and give a strong lead towards linking IBM mainframes to the new IBM Personal Computer.

The Cullinane integrated database management system (IDMS) for IBM aod plug-compatible machines combines the three levels of datbase, applistions and decision-support systems. The concept was launcbed six mnnths ago, but this was the first occasion when the Computer Pictures facilities were shown under the Cullinane banner.

NCA is introducing its Maxcim system tn the UK. A manufscturing and financial system, Maxcim already has over 200 users in the US and NCA's Sandy Towle said: "Anyooe who has a bunch of pieces to put together can use it." So far thc main takers had been in the electronics field.

Maxcim will be available on the DEC VAX supermini range and the PDP-11s.

"The British have been leaders in scieotific software, but applications is a different stnry," said Towle. "Many companies are nervous about committing their whnle futures to an electronic system, but it's going to come."

Maxcim's object is to increase productivity and reduce costs in productino and inventory contrnl, purchasing, scheduling, financlal planning and control.

Previously NCA's British customers have been supported from the Baltimore office, but NCA is planning to set up o UK office sooo.

"It will be called the London offire for convenience's sake, but it is likely to be in the Thames 'Siliroo Valley' somewhere. There will also be a user education centre in Londoo," said Towle.

A payroll module is due to be added to the package before long.

Savant launched its new Swedish-designed database, called Mimer, at Expo.

"We were lonking around for a database package ond decided this was the best among the fourth generation alternatives," said senior consultant Syd Stewart.

Mimer is said to be 98% machine-independent and to be capable of handling very large volumes of data very fast. It can be used on many standard mainframes and large minis and was adopted for the Swedish population register with over eight million 200-byte records.

Mimer has also been employed by the Bahrain government.

Altergo has spent more than £2 million since 1980 on its new database management system, AIM – the Altergo Informatinn Manager. It is designed to run nn IBM mainframes from the smaller 4300s up.

"It incorporates the Shadow 11 teleprocessing mnnitor and a Friendly Query System which gives users easy access to the infnrmation," said Altergo's Elizabeth Skerrett-Smith.

Again the emphasis was nn the integratinn aspect nf the system.

Comserv's AMAPS (Advanced Manufacturing, Accnunting and Production System) is seeking to strengthen its foothold in Europe and Comserv's Preston Blevins said it was getting a lot of interest at the exhibition.

"It's a business system that helps all aspects nf management," he said. AMAPS has over 250 clients in America and now a British nrganisation is to be established, with a beadquarters on the periphery of Londnn.

Old-established software house Logica contributed its relational database, Rapport, as well as a productinn control package.

Cincom was latinching TIS, the Tntal Information System, claimed to be the "biggest bit nf snftware ever written outside IBM".

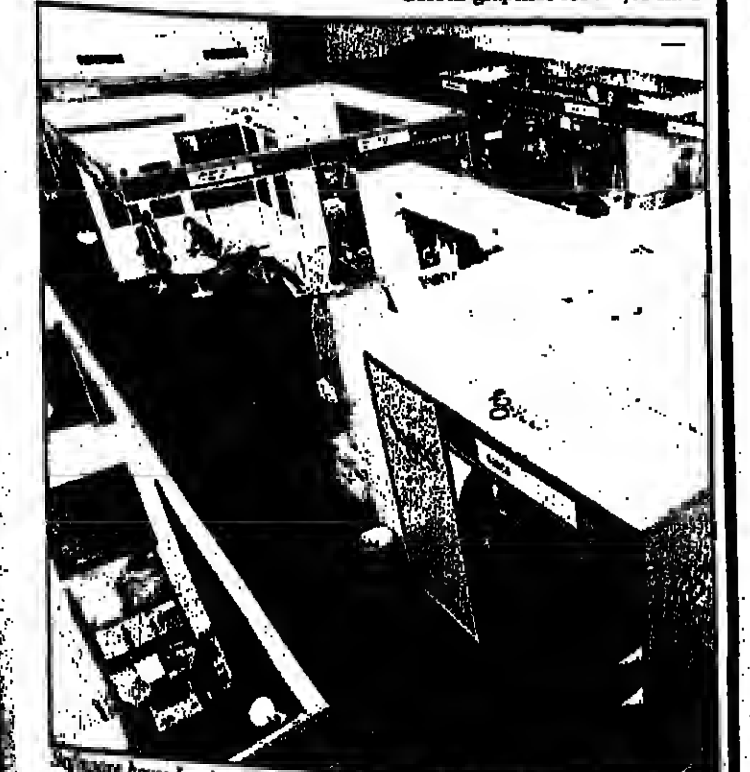
Cincom's Terry Booth said it was just making the first UK installations on behalf of Leyland. TIS incorporates Mantis, the fourth generation language, and was on public display for the first time. It runs on all IBM equipment, and has been in use in the US for two years, where it has 35 users. Since introduction in Europe has also been taken up by Unilever.

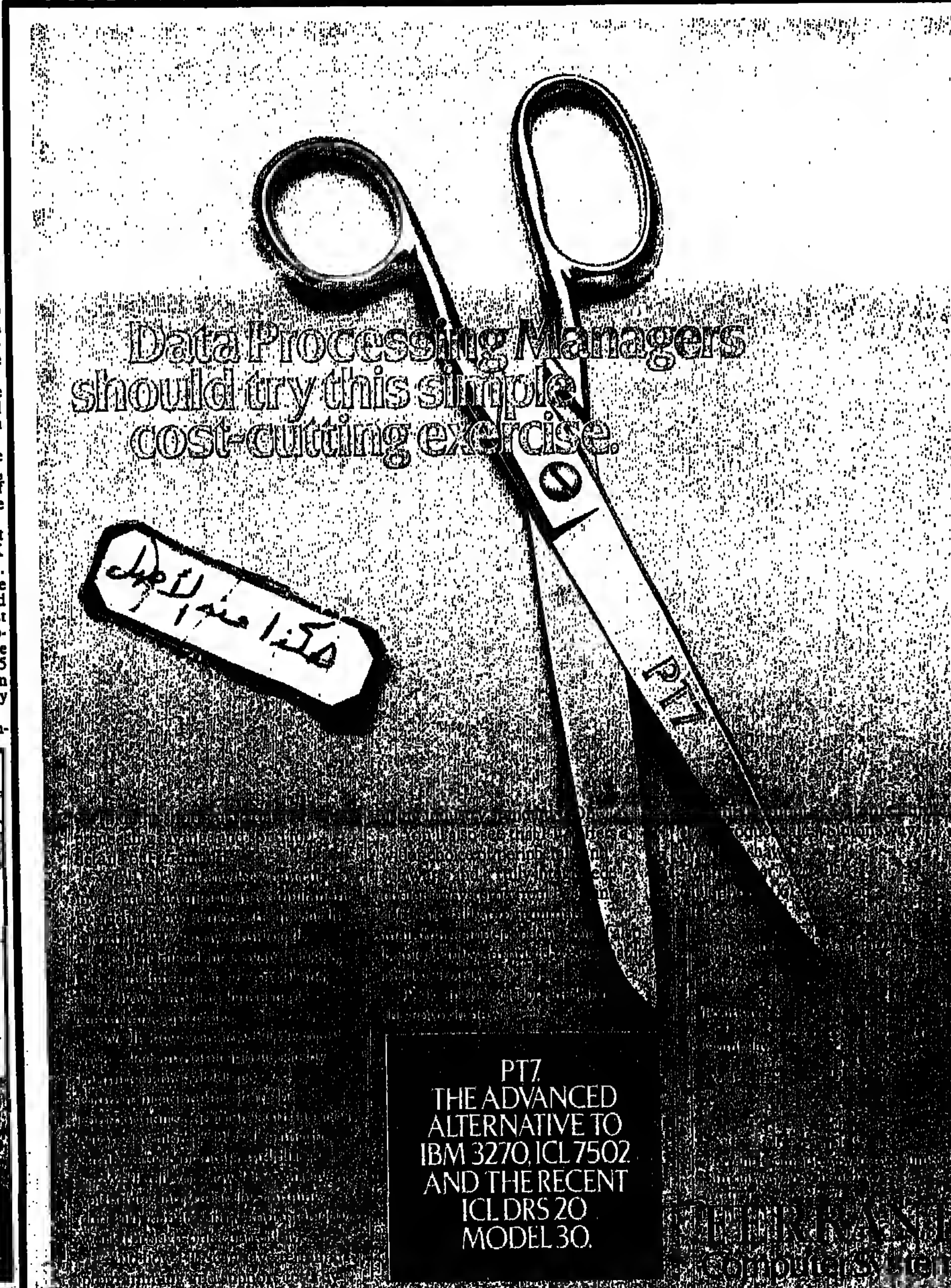
Colour graphics for major mainframes and minis were demonstrated by Package Programs. PPL's Clive Gregory, commented: "With graphics such as nur interactive financial planning system offers, we are mnving away from the era nf masses of printout and towards nne in which data will be available in o clear and simple diagrammatic format."

Electronic mail is also beginning to make an impact, with companies such as Applied Data Research drawing in both the curious and potential customers.

ADR's Nick Pnllard said: "Very soon we will have 400 of nur employees in the Email system communicating with each other via the computer."

Messages are transmitted between terminals of the 4341 which operates in a CICS environment. The Email was on show for the first time.


Software house Logica showed Rapport, its relational database.



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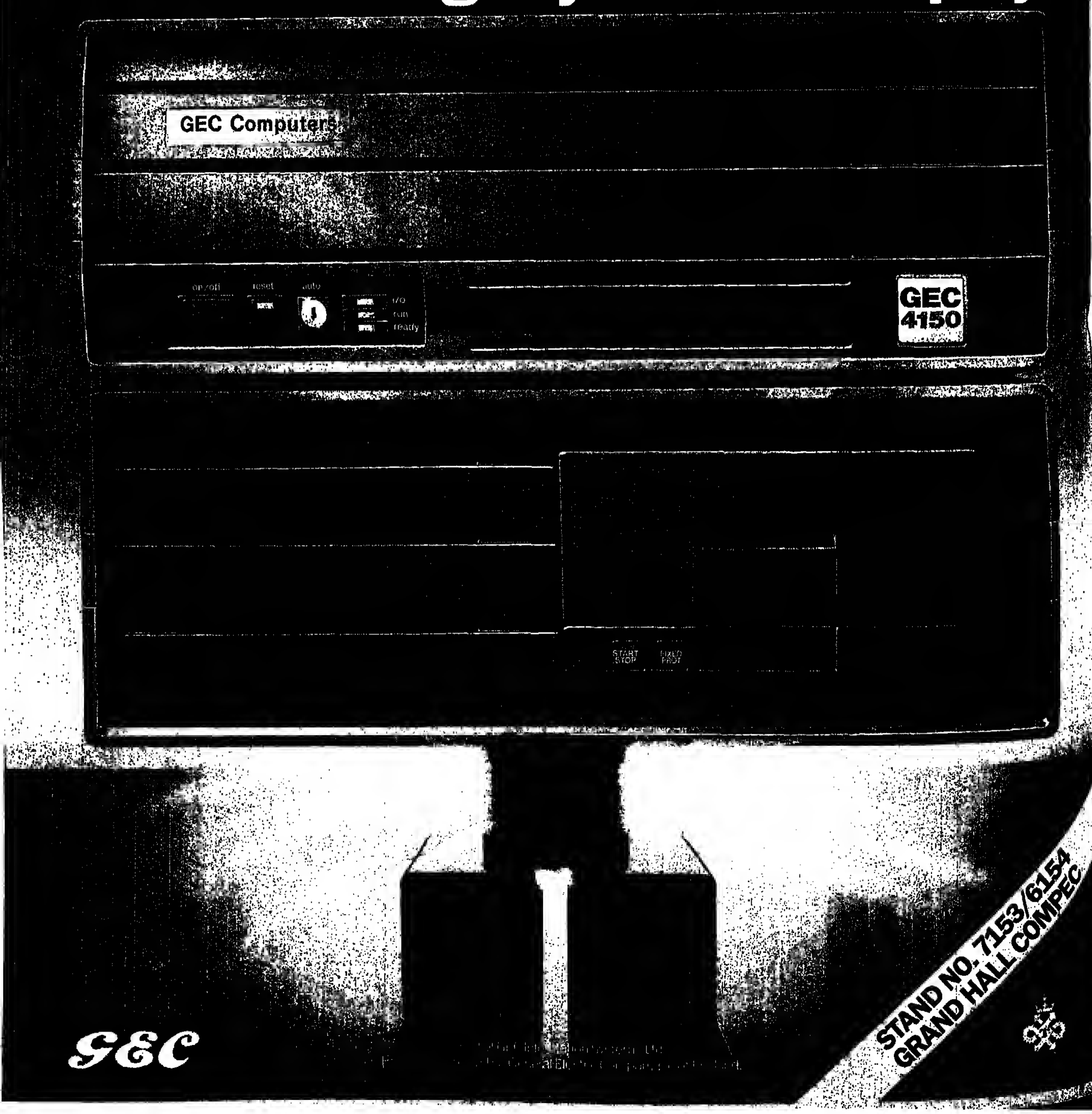

MICRO NEWS

Intel promises 4 Mbit bubbles for early 1983

MAIN US bubble memory pioneer Intel has reaffirmed its *leading position* in *this non-volatile* memory sector. It has aonounced the promised fourfold increase in chip capacity. A four-megabit bubble memory device, complete with support circuits, will be sampled in the first half of next year.

"Iotel is on schedule in its bubble memory developmeot," says David Shrigley, product marketing manager for the ooo-volatile memory division. "We said we would announce the four-megabit bubble this year, and we have. We're in it to stay."

Sample kits will weigh in at $1,780, but the volume price should drop rapidly, reaching about $600 by 1984 wheo the price per megabit will be much the same for one-megabit or four-megabit devices. By 1986 Intel expects the four-megabit bubbles to be about $150.

The new device is a double first, according to Intel. It is the highest density solid state memory yet, Iotel *claims*, with *something like five* megabits in all on a chip 14.6mm by 13.5mm. The extra bits come from the in-built redundancy that makes the device cost effecuve – and manufacturable, adds Shrigley.

The chips are slightly smaller than the present one-megabit bubble devices and more can be squeezed on to the three-inch garoet wafers. There are 16 of the oew chips per wafer rather than the 12 of the earlier device.

The other first claimed by the company is that this is the first commercial application of X-ray lithography in chip manufacture. It has feature sizes down to 0.75 microns, compared to 1.2 microns on the one-megabit bubble and 1.5 microns on Iotel's densest commercial MOS memory, the 27128, 128K EPROM.

"Garnet is the ideal material to experiment with X-rays," says Shrigley. "They change the oature of silicon, but don't alter the garnet *we use* to *build the* bubble memories."

Perhaps the most important feature for those who are going to use the device in application products is the compatibility with the preseot one-megabit devices produced by Intel and to be second-sourced by Motorola under the agreemeot signed in June.

The four-megabit 7114 has the same architecture, is pin compatible with the 7110 one-megabit device, and uses the same command set and drivers. The support circuitry is pin compatible too; the controller is virtually the same chip. The four-megabit capability was designed into it when it was being developed for the 7110, says Shrigley, and it needed only minor ROM changes.

So the controller chip – which has been the main cause of the higb drop-out rate in the bubble memory business – was the first support chip to be available for the higher density device, rather than being late as it was for the one-megabit bubble. Problems in developing adequate cootrollers were thought to lie behind the spate of exits from bubbles by companies like Texas Instruments, Rockwell and National Semiconductor.

To upgrade from current bubble memory applications to the new four-megabit chips needs only minimal hardware and software design changes, claims Shrigley. The hardware changes are to do with the device packaging. The four-megabit bubble device will appear io the leaded package specified in the agreement with Motorola for the one megabit, which itself will move to this oew, smaller package late next year. Minor software chaoges are *needed to cope with addressing the* greater device capacity.

Shrigley sees most poteotial for the denser bubble memories in computers and networks.

VASS . . . *"We're not just another overnight Silicon Valley mushroom."*

Vass set for Victory in business machines and industrial control

ROGER VASS, co-founder of one of the fastest growing microcomputer companies Altos, is out to do it again. His new start-up, Victory Computer Systems, is set to take on the business computing and industrial control markets with a range of 16-bit machines, targeted at *"serious multi-users – the market* segment a notch above personal computers, the $10,000 to $25,000 bracket."

And that is just for starters. *"Victory will* be into the fault tolerant multi-CPU business within a year," Vass adds.

Although machines will not be seen over here until early 1983 – *and then only in prototype quantities* – Europe figures large in Vass' plans for the company.

"Any company not taking a worldwide perspective is making a fatal mistake," he says. "We're not just another overnight Silicon Valley mushroom, over here as itinerant US vendors. We seek long-term relationships with distributors, and hope to manufacture in Europe."

The two versions of Victory's computer, the Spirit and Factor series, encompass both main trends in current 16-bit *micro* newcomers. The Spirit is based around the Intel 8086 family, using the 80186 chip whicb integrates many support circuits on to the processor chip, and runs CP/M-86. The Factor, basically the same machine with a different processor board, runs Unix on a Motorola 68000.

The surprise comes with the market sectors Victory is aiming to hit with the machines. "For general data processing, most people are satisfied with set application packages, a user-friendly operating system is *not* so esseotial," says Vass. "But in industrial control, where things change quickly, the ease of programming is vital."

The Unix-based Factor is to be pushed squarely into this industrial cootrol market, where it will give something that nothiog else does, Vass reckoos, and will be up against the *mini* makers like Honeywell and DEC. The fact that Unix is oot a real time operating system is looked after by adding a very fast real time executive, VRTX.

The main push into the business computer market will be with the 80186 Spirit, but Vass will not be surprised if the Unix machines find their way to business users too. He reckons 60% of Victory's estimated first year production of 1,000 systems will be Unix machines, and that a good proportion of these will be for business use.

The architecture of the two machines brings together single-board and bus-based technology. The main board is truly a single-board computer, says Vass, and contains the 68000 or 80186 CPU along with 256K RAM, a Z80-based I/O controller and ports for up to eight users.

The *disc controller* board contains yet another processor – this time a 16-bit Zilog Z8002 – and a channel expander board, again Z80-based, also carries a slave Z80 for running eight-bit CP/M applications. An Ethernet controller due in Marcb will also have its own 16-bit processor, so as not to burden the CPU. The boards are linked through the Motorola/Mostek/Philips VME bus.

Victory plans to move into full production in February or Marcb. Machines will be at sites early in 1983, with volume shipments coming in the second quarter.

HP announces first fruits of link with Sony

THE microfloppy disc market is moving from talk to substance. Hewlett-Packard bas brought out the first fruits of its multi-million dollar deal with Sony, the HP9121 which boxes the 3½-incb drives into a standalone mass storage unit for the HP range of personal computers.

The unit is available as a single drive for £837, dual drive for £1,235 or single drive plus 4.6 Mbyte Winchester for £3,477. It combines the Sooy drive mechanism with HP's electronics and packaging. Disc capacity is 270 Kbytes, the same as commonly used 5¼-inch discs, but on the 3½-inch cassette-enclosed discs.

The Hewlett-Packard system will be compatible with existing drives, and will be suited to HP's range of personal computers, as well as the new "small fcotprint" machines introduced with the microfloppy drive.

Meanwhile other computer manufacturers are startiog to appear with products incorporating the Sony 3½-inch drives. Japanese micro maker Sord has the drives integrated into the portable version of its M23 micro, and has been selling a standalone unit for a month now.

Another portable micro builder, US company Computer Devices, has also just shown its Dot machine which incorporates two Sony microfloppy drives.

200 reasons to buy the BTI 8000

With one BTI 8000, you use up to 200 terminals simultaneously running programs in COBOL, FORTRAN, BASIC and PASCAL. What's more, you can run interactive and batch jobs at the same time – in any mix!

The key is BTI's exclusive Variable Resource Architecture. Starting with an entry level system, you can increase processing power by a factor of ten, by just plugging in modules – up to 8 CPUs, *up to 16 Mbytes of memory* and up to 8 Gbytes of mass storage. All without rewriting any software.

The BTI 8000 also features a virtual memory environment, fail-soft architecture, built-in security and privacy, and remote diagnostics. And, if all that's not enough, consider this: the base system price for the BTI 8000 is 30% lower than that for comparable systems from other "supermini" manufacturers.

As for reliability and support, they're an established *BTI* tradition, thanks to more than 10 years' experience with service via remote diagnostics. BTI currently supports over 3000 systems in the U.S., Canada and the United Kingdom. For even more reasons to buy the BTI 8000, contact your nearest BTI sales office.

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MANTIS

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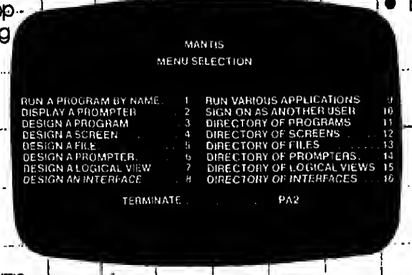

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INTERVIEW

IBM could be 'losing touch with user base'

John Grant, chairman of the IBM Computer Users' Association, talks of a growing communications gap between the corporation and its customers, in this interview with Kevan Pearson

GRANT . . . . "IBM would avoid trouble if it would communicate."

IBM is in daoger of losing touch with its expanding user baae, *according to John* Grant, chairman of the IBM Computer Users' Association, and the financial director of Alexander Clark of Glasgow.

"There is a real danger that the communications gap between IBM and its customers is growing," says Grant. And he cites two examples of where a failure in communication from IBM has caused friction among some users: First, the recent announcement that it is dropping the 3081D, and replacing it with the model G, thus making the D sn obsolete machine, and wiping several hundred thousand pounds off the value of recently installed machines.

Graot's other example was where IBM temporarily suspended Sale of Installed, under which users could buy installed rental kit from IBM at fsvours ble rates.

This ocrurred because IBM had used up all its tax allowances for the arrangement. But that did not emerge until later, after several CUA members had complained, says Grant.

IBM could have avoided any friction if it had takeo the ttouble to communicate, Grant conteods.

GRANT . . . . "I've never come across any users who would benefit from IBM being split into two."

One possible way out of this is for IBM to hold regular regional meetings with users. "It is oo longer possible to keep in touch through local salesmen," says Grant, "because the market bas changed. IBM has a much larger user base, especially at the small systems end."

An area where there has been a lot of communicatioo recently has been IBM's latest price rise, announced in August. It was the second major rise io six months, and in line with IBM's recent prices policy of increases on a twice-a-year basis.

But it reckoned without the wrath of the CUA, which wrote complaining that IBM was abusing its dominant market positioo. The result has been a series of discussions which, although they are unlikely to persuade IBM to abaodoo the latest price rises, has at least shown IBM that its users are not the passive species they sometimes seem.

Grant hopes somethiog positive will come of this, but privately he acknowledges that a massive change io IBM policy can not be effected overnight, and that IBM faces an image problem: it cannot readily admit to bowing to user preasure.

"The percepuion in the marketplace is that IBM does not respond to customer needs or demands. My personal expetience is that IBM does respond, but that it is not always willing to admit that it does," he says.

And despite the attention that the prices issue has caused, Grant says, "I would not like to be the chairman who took on IBM over prices. We have several items under active discussioo in the CUA couocil at any one time. It just happens that the prices issue was the one we chose to make public."

IBM had to listen to the CUA over prices, though it waa no doubt takeo by surptise by the tone of Grant's letter accusing it of exploitauon and abuse. "Two things strengthened our hand," explains Graot. "On ooe hand there was a 30% hike io IBM World Trade profits. Secondly, there were certain price cuts in the US."

Grant is not very critical of IBM in any area. "No company becomes sa big as IBM without being good at what it does, but this doesn't mean to say that IBM is good at everything.

"One benefit of out recent disagreement on prices is that no one has said that IBM equipment is not worth the money. They were complaining about excessive price rises – 14% on top of 12% in January. On the prices issue we are just trying to achieve our general aim – trying to get IBM to take more notice of the market than they appear to at times."

Certain IBM practices annoy the CUA, rather than causing real problems. "The secrecy – oo market share informatiun or customer list – can be an annoyance. Some countries have these pieces of information, but they are not available in the UK."

He is not so coocerned about IBM's avowed unwillingness to tell people what it is planning. "I can understand why it does this, and io any case I have not come across many people who complain about it."

Grant's views on the various anti-trust or abuse of dominant market position cases which have come IBM's way are outspokeo.

"I have never come across anyone who would have benefited by IBM being split into two companies instead of one. By splitting IBM like this you would just have two very large companies to deal with.

"The big danger is that you could eod up with a system which would please the legislators but do nothing for the users. Anti-trust action has provided artificial protection for some companies. The only way to compete in this market is to offer products and services like IBM and no ooe else does that."

So just how do you deal with a big company which allegedly controls 70% of the mainframe computer market?

Grant oaturally prefers user power. "There are two thiogs users can do – speak with one voice througb the CUA, or go elsewhere if they are really dissatisfied. Historically very few go this route."

One of the problems which coofroots the CUA from time to time is what to do about the users of indepeodent equipment from the plug compatible maoufacturers. "The council is looking at the qualificatiotia for membetship again. At the moment you need an IBM CPU. But the PCMs pose an interesting problem. The hardware compooent of the DP budget is decreasing and software expenditure is increasing, so does it matter which CPU is used? And IBM is ooe of the largest software houses in the world".

Grant would also like to aee closer links with international user groups, especially since IBM is a worldwide company and the UK rates ooly fourth in the IBM sales league table.

However, the efforts of past CUA chairmen have met with indifference if not hostility io their attempts to forge closer links with the likes of Share and Guide, the major international groups for large users.

"The UK CUA was the first national computer user group of its kind, and has the largest penetratioo io the UK (980 members). Guide and Share do not have a high UK penetrstion. There is a rift between us and them and we would like to see it healed.

"We would like to establish a good relationship with Share and Guide because of our common interests".

> **"It is no longer possible to keep in touch through local salesmen because the market has changed"**

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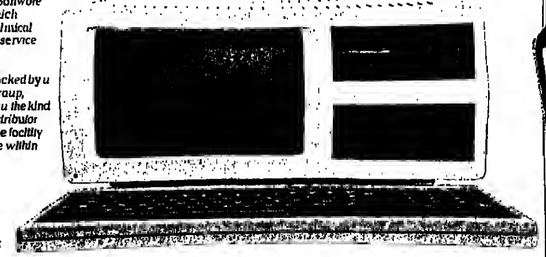

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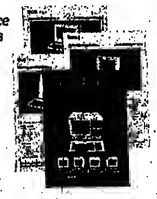

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PLATFORM

Murray Laver is a former board member for data processing at the Post Office.

New users should learn how to avoid complexity

THE trouble with experience is that no other teacher in anywhere near as good, but you cannot have it faster than real time.

You can, of course, learn from others, but the self-confidence needed to succeed in computing is not conducive to listening patiently to advice – or not until you have to rest to count your bruises. But for those willing to learn, experience is always cheaper to borrow than to buy.

Micros are bringing in many first-time users; fortunately it no longer matters much which machine they choose, nor is to too important what they use it to do – so long as it is not too important! Six months into their own experience and they will have clear ideas about hardware, software and their *next* supplier. Trying and almost succeeding teaches like nothing else, and I venture to guess some of the lessons they may learn.

They will certainly discover that persuading a computer to do useful work with the dirty data of the real world is a tricky business, and that it takes longer, costs more and achieves less than you hoped.

Some pundits still seem to believe that programming languages are the key, and new ones spring up like *mushrooms in* October. They are, in fact, irrelevant: the key tasks are for users to identify their needs, define the consequent problems, decide which a computer can help with (it won't be all), and to solve those within inevitable financial, operational and other constraints. Then the programmers can try to express the solutions precisely, completely and without ambiguity or excessive error; and which language they use will have little influence on their success.

I hope that new users quickly learn to avoid complexity, for experience teaches that programming costs and times increase much faster than in proportion to program size, due to the exploding multiplication of internal relationships, and the rocketing costs of debugging. Even professional programmers differ by factors of ten, or more, when debugging; and I shudder to think what may happen when larger, and operationally important, business programs are written by amateurs to run on micros.

It is foolish to let micros be authorised at too low a level, as a minor expenditure, for they transform and integrate working methods and organisation when properly used, whereas their haphazard proliferation can degenerate into an expensive way for executives to do dispensable sums – the untrained in pursuit of the unnecessary.

The booming sales of micros are not in response to the needs of users; they reflect the need to dispose of all those chips. As a result we are all programmers now, and most likely many of us are remaking the errors of the pioneers, for instance: undisciplined input from inexpert keyboard operation with insufficient verification; inadequate operating instructions for running our programs; failure to declare our programs' expectations and limitations; skimpy testing; rigid program construction hampering adaptation; loss of portability by using local subsets of languages and so on.

The list could go on and on, but it is long enough to reveal the experience gap between amateurs and experts.

The problem is one of organisation and human relations. Hardware and software developments can do nothing to solve it, but computer people are enslaved by technique and spend too much of their time polishing the tools of the trade: this is, of course, easy, profitable, pleasant to do, and free from human cussedness. But in the end it is the satisfaction of human needs that counts, and nothing else.

Murray Laver

PROFILE

From dish-washer to boss of $100 million micro business

IT sounds too good to be true – Korean immigrant washing dishes becomes president of his own $100 million-plus US-based company. But that is the route Philip Hwang has taken with terminal and microcomputer manufacturer TeleVideo Systems – and he still does not believe it.

"I started with $9,000 savings and two partners in my garage in 1975. Now we employ 500 people and have over 100,000 square feet of factory. When I got to the first million dollars I thought 'Wow – I'm a million dollar company'. Now we've gone past $100 million, which I don't quite believe."

But despite the rocketing growth, Hwang sees TeleVideo's course as a smooth progression. He started off importing video monitors from Korea – a business which sometimes involved flying to Seoul twice a week – moved to smart terminals, then microcomputers. Each move built on the products and experience gained in earlier stages.

"It is all logical," says Hwang. "I'd got the monitor – and I still use the same Korean supplier seven years later because he's the best – so I just had to add a keyboard and control board to get to a smart terminal. A microcomputer needs a processor, ROM and RAM, which are already in the smart terminal, so add storage like minifloppies and Winchesters and it becomes a microcomputer."

Hwang surveyed the market for two years, trying to guess which way to jump. He lived with it all the time, he says. Then he came up with his answer.

"Microprocessor-based microcomputers were becoming very good, reasonable cost and very powerful products. But without CP/M they were nothing. And the problem with CP/M is that it's single user only, and now people were demanding more. MP/M was a limited amateur product, not allowing you to share files, so it was not quite multi-user."

He sees multi-user operation as all about sharing, with joint access to files, integrated accounting software and the like. Any so-called multi-user system that slows noticeably for a third user and causes "impossibly long" ten minute waits when there are four users was just not on, he reckoned.

HWANG . . . . "I'm still not a businessman."

So Hwang came up with his idea – a real multi-user system that was fast. To achieve this he fixed on his own operating system and machine architecture.

The architecture tackled the problem of speed by giving each station in the system its own microprocessor. "They only cost $3.50 each, so why not?" asks Hwang. A computer with larger amounts of storage allows central database management.

All this is controlled by Hwang's operating system MmmOST – the three "m"s standing for multi-user, multi-tasking and multi-processor. This sits on the central computer, while the stations run CP/M, giving the wide base of application software.

> **You can start with a single-user system and just plug more users into it. I thought then everyone would be happy, but no, they always want more.**

"Microcomputers are not just toys, they have moved into business. People are not afraid any more. But you've got to come out with a growth path. With our computer you can start with a single-user system and just plug more users into it. I thought then everyone would be happy, but no, they always want more."

So TeleVideo offered more, with 16-bit stations to mix in with the eight-bit ones and graphics options. And in the new year, in a move away from the unified architecture, it will start to deliver a 68000 system running Unix for users wanting a high-power 16-bitter.

Growth potential seems to have rubbed off on the company. From nothing to $67 million in five years looks like a good enough record at the display terminal side, when TeleVideo is now the number one independent supplier, and second only to IBM overall. But it pales rather compared with the computer systems achievement of $60 million revenue after one year. Hwang expects the computers to make up 70% of TeleVideo's business next year, which looks set to scale new heights. Growth from the first quarter of 1981 to first quarter 1982 was 360%.

Hwang reckons the computer systems took off because of the timing, the architecture and the operating system – which cost five years of effort. The TeleVideo reputation, built up from its terminal side, helped too, and people bought on the name despite early reliability problems.

"It took about a year to clean up the hardware and software, but I feel good now," says Hwang. "Now I have confidence."

TeleVideo is still privately owned. Employees hold 98% of the company – though the bulk of this is Phil Hwang's, at something like 89%. It manufactures in California and Puerto Rico, and is looking towards Europe, particularly Ireland.

"I'm still not a businessman," claims Hwang. "I'm an engineer at heart. I never thought I would be a big money maker, and I still can't count the dollars. My business philosophy has been to survive, and never obsoleted. The pleasure is to get ideas over to products and have them accepted."

DOWNTIME

Answer to prayers

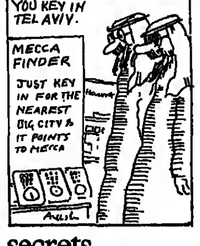
YOU only have to think of a potential application for a microprocessor these days, look around hard enough, and you'll probably find it done. It came as little surprise therefore to discover that someone had built a Mecca-finder to tell peripatetic Muslims in which direction to pray.

The Mecca-finder looks like a pocket watch and is based on a compass and a microprocessor. To pray with it, you look up a map reference of the nearest big city, adjust a small arm on the dial accordingly, and then a little minaret painted on the dial points to Mecca.

All that remains is to get down on the floor and pray with your head pointing in the direction indicated.

The Mecca-finder costs about £2, and was selling like imitation poppies in Remembrance Week.

So far Saudi Arabian Airlines has ordered a million to give away to passengers.



Election model

I KNEW things were going badly for the SDP, but I was shocked by the revelation that Britain's foremost mouldbreakers are declining rather more rapidly than the viewing figures for Channel 4.

A few weeks ago, David Owen was asking any SDPite with access to an IBM mainframe with more than two megabytes of mainstore to get in touch with him for the purpose of building a model of the SDP's electoral prospects.

But the great search is off. Owen has now realised that the IBM would be "too big and too expensive for the job", and is looking for a minicomputer instead.

Surely all that is needed is a toy word processor with a two-word vocabulary: "No" and "Chance".

Music to their ears . . .

"IBM is walking on eggs when it comes to automated office systems", says *Ordinateur*. A few weeks ago the French weekly computer newspaper published musings by Pierre Barazer, director-general of IBM France, on this subject.

In discussing the ideal automated office system he observes, "It should have multiple functions . . . should be powerful . . . reliable . . . and 'convivial' . . . it must also fit into the office." He notes that "With office systems and information technology seeming to be evolving increasingly closer links, we have to ask the question, what is the automated office system? What is its place in information processing?" To those questions he replies "I don't really know".

All this must be music to the ears of rivals Wang and Sperry.

Paper still has its uses

AMID THE EUPHORIA OF IT82 (what do you mean, what euphoria?) it is easy to carried away on a wave of electronic enthusiasm. Pundits preach of the all-electronic office which will be commonplace in the business world of tomorrow, where paper will be a thing of the past.

Large numbers of trees will be spared the sawmill, thanks to the new technology, and will be able to live long and happy lives until their leafy splendour is snuffed out by a chance lightning strike or a plague of giant beavers.

Only then will these proud life forms fall, it is hoped on top of some of the more loony pundits.

Luckily there are still those who realise that people actually like handing paper to one another.

As one speaker said at a conference in London the other day: "The paperless office is about as likely as the paperless toilet."

Oban

Russians are welcome to these secrets

SHOCK horror revelations from the CIA last week revealed that the Russians are stealing British atomic secrets stored in a Cray 1 supercomputer at Reading University. The Red Peril is obviously far more advanced in computer technology than we had thought – Reading doesn't have a Cray.

10 YEARS AGO

FROM COMPUTER WEEKLY OF NOVEMBER 16, 1972: Front that the expected recovery in the UK economy industry was materialising, was contained in the latest Department of Trade and Industry figures, showing a *big improvement in hardware* deliveries, and orders at a record level . . . Texas Instruments announced that it would start production of the Silent 700 terminal range.

Liveware File by Oban

ComputerWeekly

Quadrant House, The Quadrant, Sutton, Surrey SM2 5AS

Thursday, November 18, 1982

Will IBM learn its lesson?

THE concession on pricing wrung from IBM by its user group contains important lessons for both computer manufacturers and users. And the *main* one of these, equally applicable to both sides, is that a close dialogue between manufacturers and users is essential.

It was extremely magnanimous of IBM UK's assistant general manager, Tony Cleaver, to acknowledge that the letter in which the price rise was announced was "inadequately worded" with "insufficient rationale for the increase". Magnanimous it may be, but it would be an empty gesture without any action on IBM's part.

The IBM Computer Users' Association demanded that IBM withdraw the increase announced in September to become effective in December. That IBM will not do – it couldn't, and still retain face in the market. And heads would roll, so no senior IBM employee is going to risk it.

IBM has insimated, however, that a review of its prices policy is in order, and indeed under way.

Cleaver said: "I do understand the problem frequent price increases can cause. Given the strength of the views you expressed I will undertake to ensure that full weight is given to your views in future price increases."

There can be only one real conclusion from that. IBM will not raise its prices on a six-monthly basis, abandoning the policy it has adopted for the last three years.

Of course, simultaneous with this tacit acceptance that the CUA has a very strong case, came a rather mealy-mouthed justification for the September price rise, which the CUA had called "exploitive".

Nonetheless, the CUA has won an important victory, and clearly demonstrated the power of concerted user action. Some will, unjustifiably perhaps, say that the CUA has not gone far enough, that having achieved this much it should now press for IBM to reduce or withdraw the September increase.

These views are likely to get short shrift from the present CUA leadership, and absolutely no consideration from IBM at all. The increase is in the past, and unpalatable as it may be, companies will have to pay it.

John Grant, the CUA's chairman, is not just a canny Scot, he is also the financial director of his company. He knows that to get this far is achievement enough, an this occasion. There will be other times for further action. He, and the CUA council, have shown their mettle. It is to be hoped that IBM also acknowledges the portentous nature of what has happened, and that it learns from it.

Sadly, IBM has shown in the past that it is not quick to learn this kind of lesson.

Just a giga-memory

UPON hearing that Bart Khan had vanished, and that Micro Xeno, the company set up to exploit his 10-gigabyte solid state memory device, was in liquidation, one industry source breathed a sigh of relief and said: "Now, maybe we can get on with exploring the possibilities of the charged packet memory without the handicap of Bart Khan around."

Because what Bart Khan brought to an obscure area of information technology was an insatiable hunger for cash and a glorious inability to produce *anything* concrete, even with the experts saying that there was logic in his proposition.

The liquidators reckon that there is less than £2,000 left in a company which received up to £500,000 and appears to have spent very little of it.

But much of that money will never be claimed, according to the liquidators. Khan obtained money from people, many of whom will not want to be named, now that he has vanished.

Which all goes to show that it is very difficult to decide just what to put your money in these days. Do you take a chance on the Khans of this world, with maybe a long-shot chance that if it comes off you will be into a project worth millions? Or do you play it by the book and your broker and play only the safe bets? If you play it safe, do we ever again have a Cray or an Amdahl, or a DEC?

1984 and all that . . .

THIS week's example of the strange things people say about computers was sent in by T. I. Williams of Loughborough, Leicester, who wins £5.

The human brain can be compared to a highly sophisticated computer.

Eustace Chesser: Who Do You Think You Are?

LETTERS

Minis at Lloyd's are Data General

YOUR feature on City software (*CW*, November 4) was misleading in implying that penetration in the minicomputer market has been confined to DEC, Perkin-Elmer and Nixdorf. To my knowledge, for instance, the only systems currently installed and working on the floor at Lloyd's are based on Data General hardware.

They were both developed by Mike Ling of Ling Business Systems who has been intimately involved with operations at Lloyd's for more than five years and is, indeed, an associate member. Ling utilised this experience to design a real time system that automates the slip transactions on the basis of a syndicate's unique set of management statistics.

The systems have resolved the perennial conflict between the extremely limited space on the boxes and the need for exceptional data processing power. Slips may remain valid and operational for 50 years and more, and these vast quantities of data need computer power far beyond the reach of microcomputers.

The latest installaion of a dual Eclipse MV/6000 32-bit minicomputer system fulfils this requirement and is the basis of a system that Ling Business Systems designed, wrote and implemented in the remarkably brief space of time between April and October of this year. In achieving this, Ling drew on the experience gained from a previous syndicate installation together with systems in the Lloyd's-related areas of reinsurance and the companies market.

It is worth noting that, in addition to this important first, Data General has made considerable inroads elsewhere in the City, particularly in the area of banking and insurance. Foreign exchange, money broking, credit card and travellers cheques administration, Eurobond dealing and broking computer services are typical applications operated by major international and UK banks and Stock Exchange members on Data General Eclipse computers.

Systems engineering manager
Data General Ltd
Hounslow, Middx.

Intelligence not sapped

I WAS horrified to find someone had responded to my letter in the way that Robert Noble did (*CW*, October 28). I really had no idea that anyone could feel as strongly as he obviously does about a calculator being used to check an assertion regarding the fifth power of numbers.

The effectiveness of any appliance (including the human brain) depends, of course, upon the intelligence with which it is used, though I don't honestly believe that the sort of thing Noble seems to be complaining of is as widespread or typical as he fears.

Although his letter did make a rather alarming connection between my facetious account of the consequences of what I thought was an isolated and trifling bit of mental laziness, and the major issue of intelligent people allowing their imaginative and analytical powers to be sapped, I am sure his plea for solutions to problems, and not just answers, can serve as a useful reminder to us all – probably almost as important an issue as the crooked thinking, typified by the kind of extrapolation from the particular to the general, which Noble's letter portrayed so well.

Unfortunately, there was more irony in the second paragraph of his letter than he could have realised, because I shall actually be leaving the world of data processing shortly, and not of my own free will either!

MARTIN FLETCHER
Min of Ag, Fish & Food,
London EC4.

Privacy Bill – wait and see

A CORRECTION, if you will allow me, to your report on the Hewitt/BCS meeting.

I certainly did attack the NCCL approach to the data protection problem, as being both tactically and strategically unsound. But I did not suggest, as you put it, that they should co-operate with the BCS "to get the existing Bill through and then produce amendments later."

Speaking as an individual BCS member I will have to wait to see whether the draft Bill produced by the government corrects some fundamental faults in the White Paper. If it does then I would want to work with anyone to have amendments made to it.

If that fails, or if the Bill is so built as to resist amending to make it sensible, then I would be trying to get the whole computer community to oppose it on second or third reading and thereafter.

But I hope for better things and I am quite sure that the NCCL is strategically wrong to try to incorporate protection on *all* systems: and tactically wrong to try to do it by means of a parallel Bill, private or amending.

GERRY FISHER
London W13.

Help needed on survey

I AM just starting on a survey of Forth books and implementations for *Riomhairi*, the newsletter of the Computer Education Society of Ireland. This has a circulation of 700 to 1,000, mainly among secondary teachers. Most Irish secondary schools with computers have Apples, with Acorn systems becoming increasingly popular, but there are many other systems in schools here as well.

I would be grateful for any help that your readers could give, whether by way of documentation, book lists, or even actual books or software for review. I have already had helpful responses from Artic, MicroProcessor Electronics, Apple Orchard, and Knights, among others; but I would be glad to hear from anyone else.

HUGH DOBBS
Information Officer, CESI
Newtown Sebool,
Waterford, Eire.

Other Ansi standards

IT is not true that Cobol and Fortran are the only languages to have an Ansi standard and that Ada will thus be the third, (*CW*, October 28). There are such standards for minimal Basic (ANS x3.60-1978) and for PL/I (ANS x3.53-1976).

There can be significant differences between draft standards and actual standards (cf. Fortran 77) so that distributing software complying only to the draft is of uncertain value.

DAVID T. MUXWORTHY
University of Edinburgh.

Employers – a poor show

THE article by David Blechner Stop Fighting Each Other for Staff – Train Your Own has prompted me to reply, as it highlights my position as a 19-year-old HNC student trying to start a career in the industry.

As a habitual reader of your appointments pages, I have noted that the number of opportunities for trainee programmers with any reputable software house or mainframe company is nil.

A valid point made is: why aren't any computing apprenticeships of any kind available? From what I have seen the training opportunities for programmers are pathetic. It's a pretty poor show, everyone expecting everyone else to train the staff.

Could someone please enlighten me, how do you get that initial step up the ladder?

SIMON MEEHAN
Camberley, Surrey.

Soundex meeting

YOU published a letter of mine (*CW*, September 23) in which I mentioned the phonetic search technique we are using for the Metropolitan Police gazetteer. I have subsequently had a number of letters from people interested in soundex methods of data access.

I should like to suggest, if if I may, through your columns, a one-day meeting of anyone interested in soundex techniques where we could exchange experiences and ideas. We may even end up with an article for *CW*!

I will arrange and co-ordinate such a meeting. Perhaps any interested people would write to me enclosing an sae.

P. R. HARRISON
Harrison & Crisp
Stonehouse, Glos GL10 2ES.

Independence of consultant

YOUR article (*CW*, October 7) on the snares and pitfalls which await those choosing a word processing system, states: "On the other hand if a potential buyer can find a genuine consultant, the benefits could be enormous . . ." and you suggest ruses by which the genuine independence of the consultant could be established.

You could have suggested a much simpler safeguard to ensure this independence. If the consultant is a member of the Association of Professional Computer Consultants, then he/she is bound to abide by the stringent rules of conduct of the APCC, which ensure independence and professional integrity.

R. P. PHILLIPS
DBA Computer Services,
London SW1.

An alternative to Basic – Snobol

DONALD Alcock asks what language other than Basic could be used for a particular construction.

Consulting a Snobol 3 primer suggests the following equivalent program segment:

```
D      =  'DONALD COMES FROM'
R      =  'RBIGATE, SURREY'
SYSPOT =  D R
```

Various other languages also allow concatenation of strings, for example PL/I, and some dialects of Algol.

P. F. WAREHAM
Maidenhead, Berks.

EVEN A LEAR SIEGLER TERMINAL MIGHT GO WRONG

NOT VERY OFTEN!

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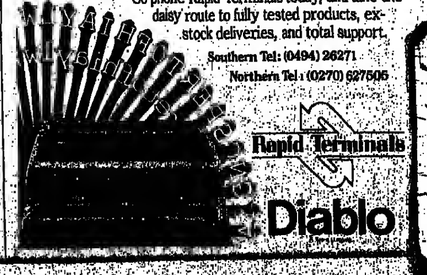

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Diablo

Leading-edge OEM products are just part of the story. Wait till you hear about the support we put behind them.

When you're looking for a supplier, obviously you want the most competitive product available — at a competitive price.

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Whether you integrate our hardware into your systems, or develop software for specific applications, your special expertise creates entirely new markets.

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With our modular approach to hardware technology, you can buy boards, boxes, or complete systems, and concentrate on building the products your customers are looking for without taking on any new problems of your own.

We put a lot into our products. And a lot more behind them.

You're probably familiar with the kind of performance and reliability we deliver. But we think you'll be just as pleased to see the level of support we give you.

Since we're interested in solid, long-term relationships, we're ready to put all the strength of our support organisation behind you and your customers. So you can offer site planning and installation; contractual maintenance; per-incident and self-support services.

You'll have the resources of our 170 offices in 39 countries behind your product, on any basis you like. From comprehensive, 24-hour, on-site maintenance to economical 'return-to-us' service.

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WORKPLACE

A programmer in one hour? . . . well, almost

BIZZARI . . . "Hardwired version at least five times faster."

WORKPLACE hears wild claims about program generators with healthy scepticism. So we feared the worst from a recent visit to Stemmos of London, which has just announced a code generator for microcomputers which run under the CP/M operating system.

With its Autocode I, the company claims any old laybody can become a programmer in an hour.

We were pleasantly surprised by what we saw. It took us an hour and a quarter to peruse the 20-page manual and write a 440-line stock control system – admittedly with a little help. But then we never were celebrated code crackers.

Stemmos sells its Autocode I for £120, cheaper than rivals such as The Last One at $600, Programmer at $495 and Pearl III from Cogent Systems at about £280.

Autocode I produces as object code dbase II, the language originally developed for the Vulcan minicomputer by Wayne Radcliffe in the US. Most microcomputers run dbase II, which was recently released on the 16-bit Sirius, and on the IBM Personal Computer.

It allows that factitious beast, the naive user, to produce menus, file maintenance programs and write reports for standard small business applications like stock control. In the maintenance section, calculations can be made to produce any conceivable combination of total and sub-total subject to the constraints of everyday arithmetic.

No knowledge of dbase II is needed to use Autocode II. But to produce more sophisticated applications with complex file linkages, Autocode can be combined with some hand-written dbase II.

"In aiming at the non-technical user, there is a limit to the degree of sophistication," admits Stemmos' overseas marketing direcor Farid Bizzari.

A close look at Autocode I reveals some minor cosmetic defects. One is that it is not possible to skip unwanted fields when creating reports. Another is that although it is possible to specify range checks when creating new files, details of individual permissible values cannot be given. It is therefore possible to rule that a particular data field must lie between one and 10, but not that it take only the values of two, four and seven, say.

When wrong data is entered during a file update, the only message Autocode gives us is a flashing cursor. Surely more detailed error messages could be provided.

But it is only by using such a system that faults are found, several of which Stemmos is now correcting. Autocode is also being given what might be called end user trials at monthly seminars on the dbase II language.

Stemmos is now considering bardwiring Autocode, in other words implementing the whole system on a ROM chip. The company is having talks with National Semiconductor in the hope of cooperating in production of such a system.

A hardwired version of Autocode would be at least five times faster, claims Bizzari.

The target date for the hardwired version is 1985. The difficulty is that the method a bardwiring depends on wht everybody else is doing. "It is good producing code for something that is not on the market," says Bizzari.

If the chip manufacturers decide to hardwire Cobol, then Autocode will have to produce Cobol object code, Bizzari explains.

Those old 'uns are still the most reliable

Celdis goes for old computers, and also it seems for well tried production methods. Amphenol circular connectors are assembled by hand.

IF you want a machine that works, buy one that's out of date. Hardly the slogan to sell the first fifth generation computer, but one reason why people are still buying old trusted machines like the Digital Equipment PDP-11.

The argument is simple – there are less likely to be bugs in an operating system that has been in use for 10 years.

One company to accept this argument is the £7 million Reading-based electronics component distributor Celdis. In 1981 it opted for the greying PDP-11 range rather than the newer and more powerful DEC VAX range, for a stock management system.

"Every garage in the country knows how to service the Morris Minor," Celdis financial director Roger Bryant explains cryptically. He points out that the PDP-11 operating system, RSTS, is now in its seventh version, while the VAX operating systems are not yet as smooth as he would like.

Celdis distributes chips and other electronics components for 10 companies including Plessey, Motorola, National Semiconductor and Ferranti. It also distributes Data General minicomputer products which, according to marketing director Doug Forbes, sell like pancakes on Shrove Tuesday.

With over 1,000 customers, and 12,000 parts to distribute, the case for an online computer system to help sales assistants provide quick answers to telephone enquiries became overwhelming. And so it was that Celdis looked around for a suitable package – but found none to match the exacting specification.

The search did, however, produce a Manchester-based company called Management Control Systems, which had experience of software for distribution. MCS agreed to write software to Bryant's specification for the PDP-11, the computer it knew.

This is the way of the market now – find yourself a suitable software package, and buy hardware to match. Although a Data General distributor, Bryant says he felt no prejudice for or against its hardware. No matter that Celdis finally opted for its arch rival, DEC.

The Celdis system allows sales assistants to examine stock lists on a VDU screen while a client waits on the phone. The amount of available stock can be looked up, or a customer's order book can be examined by keying in the account number, address, name or telephone number.

Components in stock can be thrown on to the screen with a display of colour, type, maker, and a list of equivalent devices.

There is a distinction between free stock and stock reserved for a customer. If an order comes in for more stock than is freely available, it is sometimes possible to juggle around with existing orders to satisfy the new one.

But this is not a job for the computer; human value judgments are called for. Every computer system must know its place.

The computer does, however, provide the information to enable this to happen. In particular it will print out new orders that Celdis should place with its manufacturers.

These are determined by the demand for products within their lead time, the time taken for an order with a manufacturer to be delivered.

The main difference between the Celdis system and its rivals is in the allocation process, according to Bryant. This is the process of matching up customer orders with existing stock and purchase orders already made.

"The whole point is to keep stock on the shelf as free as possible," says Bryant. Put another way, the aim is to make as much money as possible from as little stock as possible.

Celdis – or, strictly speaking MCS which wrote the software – has had success selling the system to rival distributors, one of which now has it online.

Would they now have been better keeping it to themselves, given the advantage it confers upon them? Bryant again invokes the motor car analogy. You can give a man a Ferrari, but he may nor be able to drive it, is the essence of his answer.

And what of the future? Distributing computing power to its customers, seems to be the Celdis step into rbe fifth generation. Already one customer has been given a terminal which he can use to examine available stock at the warehouse in Reading. From this, the customer can place an order knowing that at the time of writing the stock is free.

The trouble is that the stock ordered is sometimes reserved while the order is in the post. This problem does not arise when an order is made by telephone in the usual way. The eventual answer is to allow the customer to place orders from his local terminal.

The other development will be for Celdis to place orders by computer with the manufacturers it serves, like Plessey and Motorola. Already a move has been made in this direction with Celdis going online to Hewlett-Packard's stock lists.

With all this distributed computing capable of linking customer with manufacturer, one has to ask if the distributor will eventually be cut out.

Emphatically not, says Celdis. On the contrary, the distributor will be more indispensable than ever, as the service becomes faster and more comprehensive.

Long live the middle man!

Changing role of database manager

Les King continues his series on changing job functions and titles.

THE concept of the database has been with us for a dozen years or so.

In the late Sixties, when integrated management information systems were all the rage, the idea of bolding all corporate information on one file, rather tban dozens, began to emerge. At this time, database was not conceived as "clever" file access software and the main object of the single file concept was to eliminate redundancy of data by cutting out the maintenance of the same information on several files.

Additionally, the existence of a central pool of information improved its accessibility giving rise to the definition of database as "an organised collection of data with minimum redundancy and maximum availability".

However, to make effective use of such a good idea, more sophisticated access software was required and this began to appear in the early Seventies firstly as bodged up versions of report generators or bill of materials processors and subsequently as true database management systems such as Total and IMS.

Another major development was the data dictionary which maintains a record of all data items with standard field names, contents and location.

To take full advantage of these extremely powerful technical innovations, new database jobs began to appear, principally the position of database administrator and database designer.

Generally, the database administrator is a kind of technical systems analyst who has the ability to consider data in abstract terms, quite independently of the applications which will make use of the data.

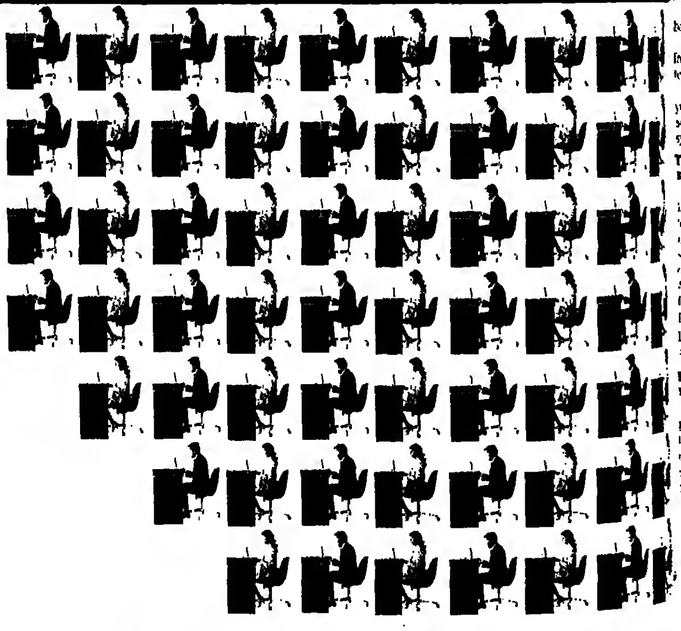
The main part of the job is data analysis, exploring the relationships between sets of data with a view to maintaining this data on the computer in a form which anticipates the likely demand for the information.

In theory, this data analysis should lead to the creation of the database before the actual applications are designed. In practice, however individual databases serving broadly related applications areas have been favoured over "total" corporate databases.

I spoke to an old colleague who has worked in this area for over 10 years.

He felt that in the future the main justification for the existence of the data processing department will be its database of corporate information. He also sees the database administrator evolving into an information manager or data manager with responsibility for the management of all information, including that held manually, within an organisation.

Such a person would know what data is available and how it is organised giving him the ability to respond directly to ad-hoc user requests without the intervention of time-consuming intermediaries.



0 to 60 without shifting software.

Alpha Micro introduces its 68000-based line of systems.

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The AM-1000. A 10 MB, multi-user system that fits on a desk.

Alpha Micro's 68000-based product line begins with the AM-1000. A desktop business system that supports two users and a printer, offers 10 MB of storage, and provides 128 KB of memory. And with its 32-bit capability, the AM-1000 offers you the kind of performance not available from 8- and 16-bit systems. In other words, it outperforms most of the currently available small business systems.

From micro to mini to mainframe with one product line.

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2. AM-1000W (winchester choice of floppy or VCR backup)	10MB	40MB	128KB	256KB	3	3	A	B	AMOS*
3. AM-1042 (winchester)	20MB	240MB	512KB	8MB	2	66	A	B	AMOS*
4. AM-1062 (winchester)	60MB	240GB	512KB	8MB	2	66	A	B	AMOS*

A AlphaBASIC? AlphaPASCAL? AlphaLISP?* AMOS Macro-assembler, Word Processing, 150 subroutines, utilities and diagnostics
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B Programming languages FORTRAN and COBOL in addition to over 100 AlphaBASIC? turnkey applications are available from third-party sources.

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Can you beat it?

AT most installations, computer downtime is as common as a hypochondriac's headache – an unpalatable fact of everyday life. But one Sperry Univac installation can boast otherwise.

The Wilkinson Transport Group has a Sperry Univac System 80, which ran continuously from June 28 to October 22 – apart from the mandatory night's rest.

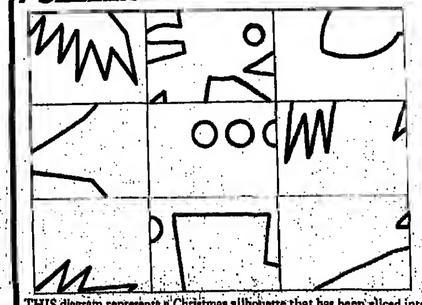
The continuous up-time was therefore 1,222 hours and 57 minutes, which Wilkinson and Sperry believe to be a record.

The computer finally went down on October 22 for a memory check, then resumed running after two minutes. For the whole of 1982, Wilkinson says the computer has been up 99.85% of the alloted time – a total of 3,010.82 hours.

Can any installation boast better figures?

Workplace is compiled by Philip Hunter and Andrew Thomas.

PUZZLER



THIS diagram represents a Christmas silhouette that has been sliced into nine equal-size rectangular pieces, and then reassembled incorrectly as shown. The problem is to cut the diagram up along the grid lines, and rearrange the nine pieces to form the correct picture once again. See page 24 for solution.

PEOPLE

Ex-IBM chief to head State military supplier

FORMER directnr and general manager of IBM UK has been appointed by the government te run Royal Ordnance Factories, the State military equipment supplier. **Frederiek Clarke** will be chairman and chief executive of ROF and as such will plan and supervise the development ef the 11 factorlea into a "free-standing commercial organisation".

The factories, which between them employ about 18,000 people, will continue to be managed under a trading fund until legislation is introduced to run them under the Companies Act.

Clarke had been general manager of IBM UK's marketing and services since the company merged its data precessing, general systems and office products divisions at the beginning ef the year. He joined IBM in 1957 and moved from selling through a variety of management posts until he was elected to the boards of IBM UK and IBM UK Heldings in 1974.

■ Two appointments to the recruitment group of Deloitte Haskins and Sells Management Consultants have been made as a result ef increased business lo the last few months. **George Cross** joins the company from Reed Executive Selection, where he was operatiena director, and **Mark Rodrigues** joins from BIS Ltd, whero he was managing director.

■ Issco, subsidiary of computer graphics software company Integrated Software Systems Corp, has appointed **Paul Barrett** as UK technical support manager. He was previously in pre-sales support with Perkin-Elmer.

■ **Oz Hornby** has been appointed third party marketing manager at Burroughs Machines. He joins from Apple where he was national account and OEM manager.

■ **Standby Power Systems** has announced that **Stuart Broughton** has beeo appointed general manager ef the company. He was previously engineering manager.

■ Two new sales appointments have been made at Rebin Electronics in the Midlands. **Paul Milham-Harris** joins the company as area sales manager fer the West Midlands and **Neal Heoper** becomes area sales manager for the East Midlands and East Anglia.

■ **David Lodge** (above), previously controller of Guardian Royal Exchange Assurance's data processing department, has been appointed controller, telecommunications. He will continue to work in the company's DP department, based at Lytham.

■ **Roy Cordle**, new director of traioing at Management Systems Training Council, replaces **John Mallabar**, who has emigrated to Australia. Cordle joins the Birmingham-based Council from the Computer Services Company of the National Bus Group, where he was in charge ef training and education.

■ **BA Blectronics**, part of the Newey & Eyre Electronics Distributors group, has expanded its salesforce with two new appointments. **Keith Ramsden**, formerly of Intereil, joins the company as sales engineer for Hampshire and Dorset and **Andy Burton** joins from Tectonic as sales engineer fer South-east England.

■ **Sue Lloyd-Osborne** (below) has been appointed communications manager with joint responsibility for MSA and Peachtree International Software. She will manage all aspects ef marketing, public relatiena, advertising and exhibitions for both companies. She joins from UCSL, where she was corporate marketing communications manager.

■ **Daniel Lancry** has joined the Dublin-based European Software Company as manager ef technical services. Previous positions were with IBM, TP Systems and Plug Compatible.

■ **Business Computer Systems** has announced two appeintments, sales manager and financial director. **Clive Taylor**, who jeins the company as sales manager, was previoualy a sales manager with Adler Business Systems. **Tony Cunningham**, financial director and company secretary of BCS, joins from Aerodio where he was general manager of the products and computer services group.

■ **Software Arts Inc**, creator of the VisiCalc personal computer program, has appointed **Bruce Rampe** to the newly-created position of director of marketing and sales. Previous jobs include vice-president of Rola, director of sales at Bose and national sales manager, special markets, at Royal Business Machines.

■ **Andy Miller** has left Norwell Computer Systems to join Butel Business Systems as sales directer.

■ **Roger Bowen**, former sales manager fer Cifer Systems' Northern region, has been promoted to UK sales manager.

■ **Cliff Smith** (below) has been appoinred director of sales at Computer Associates. He joined the company last year from CAP-CPP.

DP people on the run for charity

AS IF Computastars wasn't eneugb fer athletes from the DP industry, six teams from that event plan next April to run 860 miles, from Jehn O'Groats to Lands End, with a view to raising £30,000 for charity. Competing for the Kalamazoo Cup are Kalamazoo Business Systems, British Leyland Systems, Barclays Bank, Computer/NCR, Rowntree Mackintosh and a Computastars team selected by Computastars organiser Gordon Cairns.

The charities to benefit from Jogle 83, sponsored by Kalamazoo, are the Arthritis and Rheumatism Council for Research (Arc) and the British Heart Feundatioo. Money is to be raised in three ways sponsorship for individual runners, local raffles and through donatiens in cash or kind (food for the run, accommodation, raffle prizes, etc).

About 99% ef the runners and administrators are from the computer industry, so those who would like to do their bit and expend no more energy than to open a donation in the post to R. Jogle-court, Jogle 83 chairman, Kalamazoo Ltd, Northfield, Birmingham B3 2RW. Tel: (021) 4752191.

■ After 28 years in the textile industry, **Andrew Cosgrove** has joined Cambridge Data as chief consultant. He was previously a consultant with the Hosiery and Allied Trades Association, responsible for its computer activities.

■ Peachtree Software International has appointed Ray Tool as dealer manager. He will be responsible for negotiations with dealers throughout the UK. He was previeusly with Cincom as manager of its financial software products.

■ **Godfrey Smith** has joined WordNet UK as marketing director. He joins from CPT where he was a senier sales executive.

DIARY

NOVEMBER 22

Participative design. BCS Hampshire branch. Mountbatten Theatre, Southampton. 7.30.

NOVEMBER 24

Conference. BCS Data Dictionary Working Party. Details from Roger Johnson on 01-854 2030 ext 238.

Tour of IBM's research facility. BCS Displays Group. IBM Hursley, Winchester, Hampshire. 11.00. Details from Ray Barnshaw, University Computing Service, The University, Leeds.

Computers in retailing. BCS Edinburgh branch. Mountbatten Building, Heriot-Watt University, Grassmarket, Edinburgh. 6.00.

Medical computing. BCS Sussex branch. Royal Sussex County Hospital, Eastern Road, Brighton. 7.30.

NOVEMBER 25

Introduction to present methods of helping the bandicapped child. BCS/Lincolnshire Micro Society. Details from Brian Smith on Lincoln 810753.

NOVEMBER 30

Prolog and Expert systems. BCS South-west branch. Lecture Theatre 5, Plymouth Polytechnic.

DECEMBER 1

Unions in DP – is there a place fer them? IDPM Central London Branch. Altergo, Imperial House, 15-19 Kingsway, London WC1. 6.00.

Head-hunting in DP – DPM: Where do you go eow, and how do you get there? IDPM Sussex branch. British Caledonian Headquarters, Caledonian House, Bens Way, Crawley.

DECEMBER 2

Introduction to computing is a technical envireement. BCS Hampshire branch. Mountbatten Theatre, Southamptoe. 2.00.

DECEMBER 3-4

Silver Jubilee Computer Fair. BCS Wolverhampton, supported by IT82. Details from S. Fenurd on (0902) 27371.

DECEMBER 9

Annual general meeting. Association of Field Service Managers. Skyway Hetel, Hayes. 10.30. Details Paul Newnham 01-560 0700.

JANUARY 5-6

Viewdata. Conference on the istate of the art. Institute of Information Scientists' WP and computer information special interest group. Details Mrs Bird on: (0115) 645 2000 ext 8611.

CONFERENCES

■ OFFICE Lighting, Present and Future, will look at lighting design for the electronic office. The half-day conference, to be held at the RAC Club in London on November 29, will cover ergonomics, technological development in lighting, and lighting the office of the future. Fee is £40. Applications to Sheena Wilson, Building Use Studies, Bulstrode Place, Marylebone Place, London W1 4PW. Tel: 01-486 9281.

■ IAL Gemini is holding a workshop on data processing conversion on December 7 at the London Barbican Centre. Principal speaker is Tom Patti, who has managed several hundred successful conversions for the US and Europe. By the application of practical management techniques the process of conversion can be contained within a framework of planning, execution and control, says IAL. The workshop covers the need for a survey, the phases of conversion and successful implementation. Fee is £95 + VAT. Details from IAL Gemini, 106 High Street, Uxbridge, Middx UB8 1JQ. Tel: (08954) 74011.

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at THE **Northern Computer Fair**

Personal computers
Home computing
Small business systems

BELLE VUE, MANCHESTER
NOVEMBER 25-27, 1982

Opening Times
10am-6pm each day

The brains we're talking about are the printed circuit, silicon-chip variety and you'll find them (thinking hard) in the vast range of exhibits at The Northern Computer Fair. The show covers the fields of personal computing, home computing, small business systems and associated software, through computer books to video games, with a special attraction being the ZX 81 Sinclair Village. So whether you're a businessman (or woman) who needs to keep up to date with the latest developments in this fascinating field, a die-hard computer enthusiast, or simply interested in the subject, you'll find what you're looking for at the Northern Computer Fair.

Ticket prices at the door are £2.00 for adults and £1.00 for children under 16, but special party rates are available for 20 people or more with the organiser admitted free. For more information contact IPC Exhibitions, Surrey House, 1 Throwley Way, Sutton, Surrey SM1 4QQ. Tel: 01-643 8040.

BANKING

Competition among document reader makers will be fierce to meet the banks' deadlines, says Warren Palmer

December 1983–a red letter day for banks

WHEN you next write out a cheque and grumble te yourself about the 15p that it will probably cost, it is worth sparing a meament's thought about its subsequent processing.

First, the amount fer which the cheque is made eut is manually encoded in magnetic ink characters next te the cheque number, bank sort code and account number en the bettem ef the cheque. After being batched and totalled, the cheques are usually manually sorted into those drawn on your bank, and those drawn on other banks which are members of the central clearing system.

They are then transferred to the bank's head office and from there to the central clearing house. From here, couriers deliver the cheques to the banks on which they are drawn, eo matter where they were presented.

All the bank's cheques, up to 4,500,000 in a busy day at National Westminster, are then fed through high-speed reader/-sorters several times to arrange them inte serial number, within account number, fer each branch of the bank.

During the first pass, the relevant accounting information is extracted and retained for account updating during the following night. Finally, the batches ef cheques are sent to the branches on which they are drawn, both fer signature verification and to be available should any queries arise at a later date.

Simple though this procedure sounds in principle, the sheer volume of paper demands some of the most modern techology in the world, representing an investment by the banks of many millions of pounds. The latest document readers installed by the National Westminster Bank, for example, are Trace 1 machines from Recognition Equipment which read both optical and magnetic ink character founts on the same pass at up te 108,000 documents an hour.

Ultimately, the aim of the banks must be to eliminate paper transactions using electronic fund transfer networks, but people in the industry see little chance of a reduction in the amount ef paperwork they must process for at least the next 15 years.

Per some 20 years now, the major banks have been using automated systems fer clearing cheques ("debit clearing" in bankers' terminology) which have allowed them to cope with an ever-increasing amount of business without a consequent growth in their everheads. Less clear at first glance is why, with the enormous savings to be made, the banks have yet to automate the credit side of their business.

The answer is that an automated debit clearing system which processes cheques in three days benefits only the banks – the writer of the cbeques would in most cases like clearance to take as long as possible! The other major factor which led the banks to automate debit clearing first was that they control the production and printing of virtually all cheques. Consequently they found it relatively easy to come up with an industry standard specification for the encoding of information to facilitate automatic reading.

Witness the magnetically coded characters on the bottom line ef yeur cheques in a type fount designated E-13B.

Incidentally, contrary to the impression engendered by commercial designers and graphic artists who constantly use a full alpha set, E-13B is a relatively limited fount which does not define alpha characters. The implications of this restriction of E-13B will become apparent later.

Credit clearing, on the other hand, is a customer-oriented service, with most documents being produced by the customers themselves. Since E-13B printing is both expensive and slow, the banks decided to offer the alternative of documents encoded with optical character recognition (OCR) founts to minimise customer resistance. These OCR documents, in contrast to MICR, can be printed quickly and cheaply.

Despite these problems, the banks decided that they would automate the credit clearing side ef their operatiens by December 1983. After a great deal of deliberation they have produced an industry standard specification for credit clearing documents in a similar fashion to the E-13B line en the bottom of cheques.

However, to allew the customer as much choice as possible, the specification has been kept flexible with regard to the use of MICR or OCR encoding of information.

The specificatien, Inter Bank Standard 3 part 2, states that the encoding must allow for a reference field of variable length up to 18 characters cootaining the full alphanumeric set and special characters. (Remember the numeric only limitation of E-13B!) Fer the complete specification of this code line see Figure 1.

The machine which has dominated the cheque reading machine market in the banks up until now is the IBM 3890, which was designed specifically to precess cheques encoded in the MICR fount E-13B.

IBM has nearly 70 of these £250,000 3890 machines installed at the various UK banks handling virtually all the cheque clearing operations.

However, many European Giros, banks, and ether financial institutions already operate clearing systems based on OCR rather than E-13B. This market, in contrast to the UK, has been dominated by Recognition with its Trace 1 system, of which about 70 have been installed throughout Europe.

The IBM 3890 can be used to read either MICR or OCR, depending on the particular model, but not both forms of coding in the same machine. An attempt was made to overcome this limitation by making the OCR 3890 read MICR optically rather than magnetically, but is believed to have proved less than satisfactory in practice.

This leaves the banks in the position of having a highly satisfactory cheque reading system in the IBM 3890, but a new interbank standard for credit clearing for which it is not suitable – it cannot transmit the full alpha set, nor offer the flexibility ef reading both MICR and OCR characters.

Even more important, its reader buffer restricts the user to a 48 byte record which is insufficient for all the informatieo required for the credit clearing operation.

Obviously with such a large potential market in prospect, alternative suppliers are wooing the banks' data processing departments and highlighting the benefits of their particular machines.

Burroughs, which has long been interested in the banking market, is offering two machines – the S6000 medium speed document reader and the much larger and faster 9185. Altheugh several S6000s have already been ordered by the Midland Bank, there appear to have been no sales of the more powerful 9195 in the UK or Europe.

However both the S6000 and the 9195 document readers rely on Burroughs' mainframe computers and are therefore unlikely to be of interest to the majority of banks that use IBM hardware.

With the other mainframe manufacturers such as NCR, ICL, Control Data and Univac not geared to the production of high-speed document readers one has to turn to the smaller independent suppliers of this type of equipment such as OCR-Scandata and Recognition Equipment.

OCR-Scandata used to act as UK distributor fer the Cummins Allison Corp document readers, prior to that company's data systems division being bought out by Recognition. As a result of this takeover OCR-Scandata became agent for another American manufacturer of documeot readers, BancTec, whose medium speed systems cost in the region of £150,000.

REL has two offerings, Trace 1 and Trace 2, which can be run in 3890 emulation modes so that they operate under the same Stacker Control Instructions (SCI) language which controls the 3890 when linked to an IBM mainframe. Trace 2 is about twice as fast as the Burroughs S6000 and costs about £140,000 but is still firmly in the medium speed range. Trace 1 at about £350,000 is a high-speed document reader which competes directly with the IBM 3890 and the Burroughs 9195.

Several major decisions will have to be taken by the banks within the next three or four months if the new equipment is to be ordered, delivered and commissioned in time for the December 1983 deadline.

So far the state of play looks something like this.

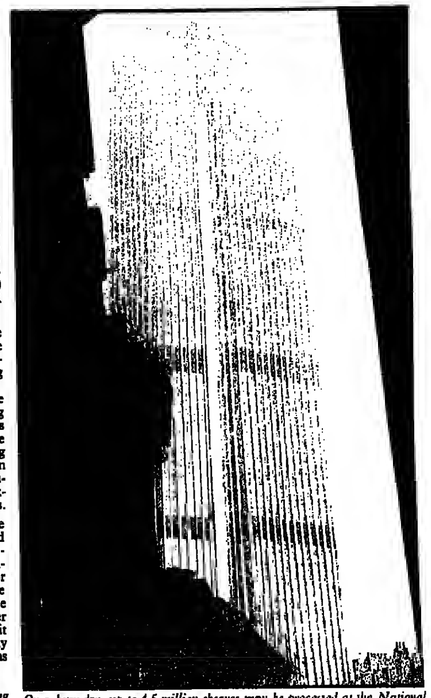
The Midland Bank has already ordered six of the small S6000 systems from Burroughs and as far as can be seen is the only possible prospect for the much larger 9195.

Barclays internal branch te branch clearing heuse uses feur offline Cummins Allison systems from OCR-Scandata, but the bank has yet to make a decision en its major credit clearing operation. Lloyds is believed to be experimeoting with a modified 3890 which is attempting to read MICR characters optically.

The Bank of England, en the other hand, has ordered three Recognition Trace 2s in 3890 emulation mode for cheque processing and credit clearing.

National Westminster is the only one of the big five clearing banks which has indicated its policy in the critical high volume credit clearing area, by ordering five Trace 1s from Recognition specifically te handle tbese epersations, and to provide a direct back-up to its IBM 3890 cheque readers.

As the time drawe nearer for the new equipment to be installed and made eperational before the December 1983 deadline, competition amoog the document reader manufacturers is certain to be fierce. This is particularly true when you ceosider tbat whoever gets the lion's share of this credit clearing market will alse be ideally placed to replace the IBM 3890s as they are gradually phased eut.



■ *Warren Polmer is managing director of Recognition Equipment.*

On a busy day, up to 4.5 million cheques may be processed at the National Westminster head office in the City.

Field	OCR/MICR	Details	Optional/Mandatory
Amount (OCR)	OCR	Variable 10 Numeric	O *
Reference	Either	Variable 18 Alphanumeric	O
Sort Code	Either	Fixed 6 Numeric	M
Account Number	Either	Fixed 8 Numeric	O **
Transaction Code	Either	Fixed 2 Numeric	M *
Amount (MICR)	MICR	Variable 11 Numeric	O *

*Figure 1. Credit clearing specification. * denotes that although the amount fields are both shown as optional, one of them must be present. ** denotes that although the account number is theoretically optional, it is present in all cases except certain large customers who are given a unique bank sort code by some banks to simplify processing. In these cases, the Account Number field is redundant.*

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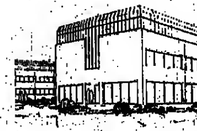
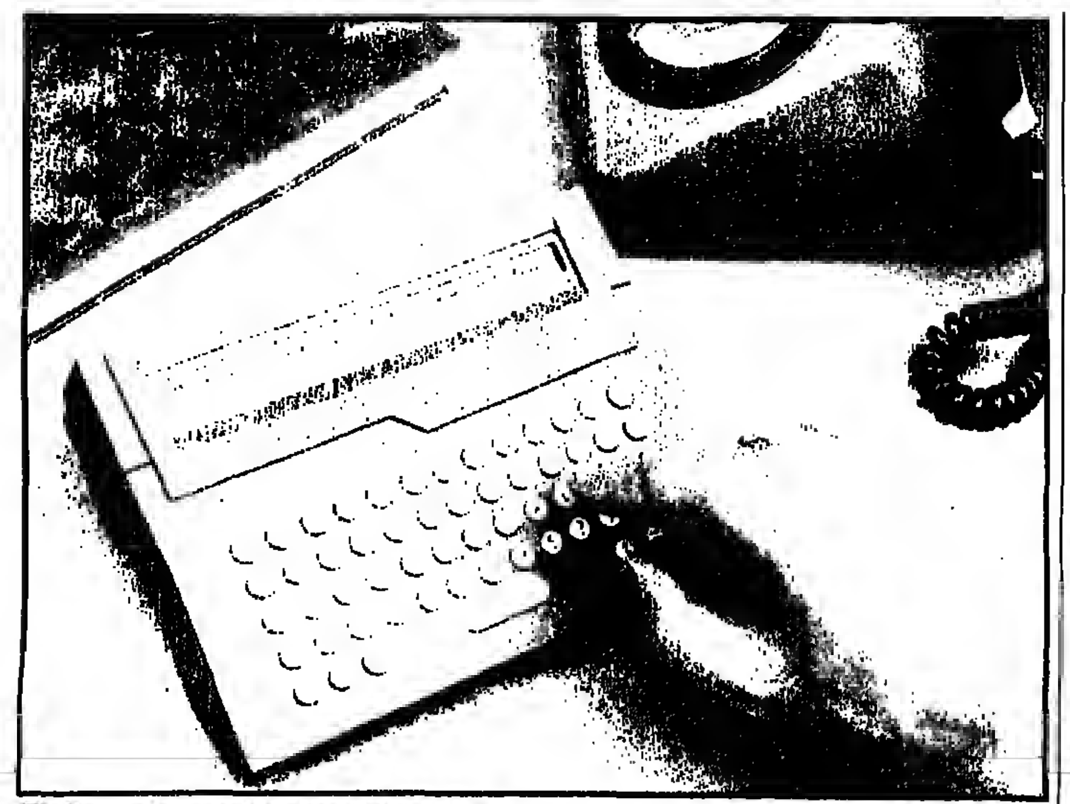


For further details please contact:-
Norman Batchelor, Commercial Director, Washington Development Corporation, Usworth Hall, Washington, Tyne and Wear.
Tel: Washington (0632) 463591.
Telex: 537210 DC WASH G.

Washington

PRODUCTS



The Microscribe terminal from Terminal Technology.

'Smallest terminal on the market' claim

TERMINAL Technology, has launched what it believes to be the lowest cost and smallest general purpose terminal on the market. Developed for the company by QED Product Design Consultants, and manufactured in the UK, the Microscribe terminal is designed primarily as a desk-top information retrieval tool.

It can be used with any host computer, peripheral or network utilising the industry standard RS 232C serial interface at speeds up to 9600 baud whilst supporting XON – XOFF protocol.

Weighing 500gms and measuring 190 × 140 × 26mm, the Microscribe has an ergonomically designed full qwerty keyboard with a single line alphanumeric LCD display of 16, 32 or 40 characters. The 8.7mm high characters are formed from a 5 × 11 dot matrix to give upper and lower case with true descenders. Special graphics with an underline cursor are standard features.

The basic onboard storage capability of 160 characters can be expanded to 32,000 by internal RAM. A memory protect feature keeps all data stored in RAM intact for 1,000 hours even when the rechargeable batteries are fully discharged. A cassette port allows for the transfer of unlimited amounts of data to and from ordinary cassettes or dictation minicassettes.

The terminal is microprocessor based, with a software routine that enables a dual operating mode to be selected via the keyboard. These modes are application oriented and enable the terminal to be used in either "engineering" or "executive" type environments. The engineering mode allows the user to capture and view all 128 Ascii characters, including control codes.

Both NMOS and true CMOS versions are available to offer the user low cost or portability, with a battery operated version giving typically three to four weeks use between charges.

The software controlled keyboard uses conductive elastomeric technology and features full travel switches with excellent tactile response and selectable audio feedback.

Terminal Technology (CW), Clarence House, Clarence Place, Newport, Gwent NPT 7AA. Telephone (0633) 214128/9.

Upto 4.8bn bytes of online disc storage

THE new Model 650 controller from Xylogics International offers up to 4.8 billion bytes of disc storage directly bootable from any DEC VAX 11/730, 11/750 or 11/780 computer system.

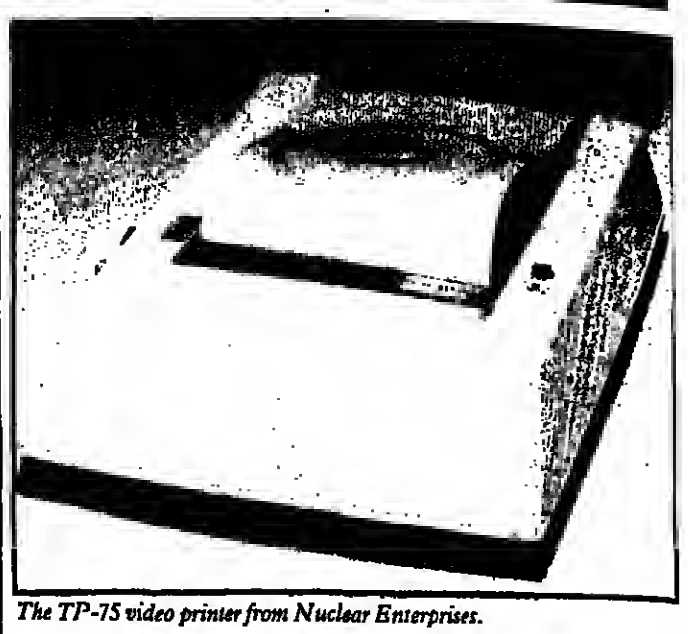
The Xylogics controller runs on all DEC Unibus machines including the DEC VAX 11/780, 11/750 and 11/730 emulating RM02/3 and RK06/7 disc systems. The basic 650 controller links up to four drives with SMD interfaces, providing a total of 2.4 billion bytes. By adding the exclusive Xylogics I/O Expander Card, this capacity can be doubled to a total of 4.8 billion bytes.

The Xylogics 650 utilises a 16-bit bipolar bit splice microprocessor to provide operating and diagnostic commands. All current DEC VAX software can be used.

An important feature of the Xylogics 650 controller is an Autoformatter which gives users the ability to format discs without CPU intervention. Xylogics has built on-board ECC error detection and correction systems into the 650 to save valuable central processor time otherwise used to carry out error detection and correction.

The 650 consists of a single multi-layer hex width board capable of supporting up to four 675 Mbyte drives, and a quad width expansion board that will support up to four additional drives if required.

Xylogics International (CW), 46-48 High Street, Slough, Berks SL1 1BN. Tel: (0753) 78921.



The TP-75 video printer from Nuclear Enterprises.

Fast printing direct from VDU screens

FAST, high resolution reproduction of an image on any type of CRT display is claimed possible with two new electrosensitive printers from Nuclear Enterprises, of Beenham, Berkshire.

The first range is the TP-75, a high resolution-only machine capable of printing up to 1280 dots (horizontal) × 1500 dots (vertical) per display on A4 paper – in 23.5 seconds. Both the TP-75 and the smaller, lower-priced TP-55 are said to offer improved reliability over earlier models. Nuclear Enterprises, which is marketing the printers in the UK on behalf of the Toyo Corporation, forecasts greater demand for high quality video printers, because of their ease of use and fast, high quality reproduction.

The TP-75 measures 116mm × 365mm × 480mm, weighs 10kg, and can be connected to all kinds of CRT display via a single coaxial cable, without a special interface. The TP-75 utilises two methods of scanning: interlaced and non-interlaced.

Both the TP-75 and TP-55 are claimed to be quiet in operation. All data on a VDU screen can be copied without modification, and both units can be easily connected to all kinds of CRT display for terminal and microcomputer uses. High speed printing and high reliability are assured through highly-reputed LSI and new print mechanisms. Both models can be remotely controlled.

The TP-55 provides positive and negative prints from black and white or colour displays, and copying can begin the moment the power is turned on, unlike other printing methods, including dot matrix, which require a "warm up" period before operation. Measuring 260mm × 370mm × 160mm and weighing just 4.8kg, this model utilises the 2:1 interlace and progressive scanning methods. High resolution is possible with 1280 × 1000 dots per display. Paper size is 127mm wide on a 40 metre roll.

The printers can be employed in a wide range of applications in the industrial and scientific fields, and in the normal data processing markets.

Nuclear Enterprises (CW) Sighthill, Edinburgh, EN11 4BY. Tel: 031-443 4060.

MDS adds to range

MOHAWK Data Sciences has announced the addition of the Model 2141-3 printer to its line of peripheral hardware supporting the Series 21 distributed data processing systems.

The Model 2141-3 is a high-quality, 96-character, serial RS 232C-compatible station printer which operates at a maximum speed of 40 characters per second.

The Series 21 will support one 2141-3 printer per attached operator station. This currently allows up to eight 2141-3 printers per system. Both single and dual channel printer controllers will be available.

The Model 2141-3 will be offered with either friction or pin-feed platens, and users will have a choice of unidirectional forms tractor, cut sheet feeder and a mechanical front feeder, covering a wide range of forms handling capabilities.

Mohawk Data Sciences (CW), Seven Century Drive, Parsippany, New Jersey. Tel: (201) 540-9080; ext 294.

Streaming tape controller

GENERAL Robotics Corporation has introduced a new streaming tape controller that interfaces the Archive and Cipher ¼-inch streaming tape drives to the DEC LSI-11 QBus. The new product, the STV11, allows users to back up their hard disc systems in a fast, efficient manner, says the Corporation.

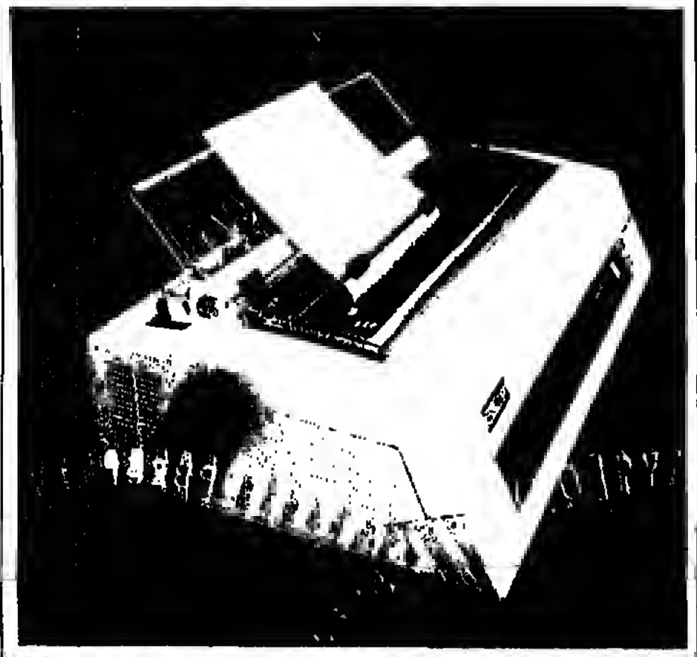
The STV11 is packaged as a dual height LSI-11 QBus module and emulates the DEC TM11 for full software compatibility with all DEC operating systems. A single 50-conductor ribbon cable connects the controller to up to two Archive or Cipher streaming tape drives with two or four recording tracks. The device address and interrupt vector are switch selectable for ease of integration and for selecting a non-standard address and vector.

From 10 to 45 Mbytes of data can be stored on a single 450ft tape cartridge depending on the tape drive model used.

Data may be recorded at rates up to 87,200 bytes per second on 90 ips drives. These rates allow one Mbyte to be recorded in less than 12 seconds. The controller incorporates CRC error checking and results in less than one non-recoverable error in every 10 billion bits, it is claimed.

Pricing begins at $1,500 with quantity pricing down to $945.

General Robotics Corporation (CW), 57 North Main Street, Hartford, WI 53027, 414-673-6800.



The Daisywriter 2000 printer from CPU Peripherals.

Solving the 'trade-off'

LATEST enhancements to the Daisywriter have been made to create a daisywheel printer which solves the "trade-off" problems facing computer users. The decision whether to put up with typewriter-type printers with short life spans or computer-quality units at too-high prices no longer applies, claims CPU Peripherals.

The new Daisywriter 200 continues the features of the original 2000 model introduced a few months ago – 16K or 48K buffer with 99% full warning; auto or manual selectable baud rates from 50 to 19,200; selectable page length settings; variable pitch and proportional spacing; 20 chps bi-directional printing; linear drive motor, dust-free enclosed daisywheels and 3-chip processor control for reliability.

The new features include a universal interface. By changing only the low cost connecter cable, this allows the printer to plug into any computer and operate on any software designed for any other daisywheel printer.

CPU Peripherals (CW), Rodd Industrial Estate, Govett Avenue, Shepperton, Middlesex TW17 8AQ. Tel: (98) 46433.

'Unmatched speed' claim

A LOW-COST Microprism printer offering print and graphic quality approaching daisywheel standards is now available from Teleprinter Equipment. Using the established Prism 9 wire printhead, the new unit will offer unmatched speed and performance for cost in the personal computer market, says the supplier.

In print mode the Microprism's throughput is 75 characters per second (correspondence-quality) or 110 characters per second (data). Quality reproduction in graphic mode is ensured by high-density – 84 by 84 dots per inch – printing.

Teleprinter Equipment (CW), Akeman Street, Tring, Herts HP23 6AJ. Tel: (0442 82) 4011/5551.

Dual purpose printer from Wilkes

A VERSATILE printer, the Anadex WP-6000, from Wilkes Computing is claimed to be suitable for both word processing and high speed draft and data processing applications. It also provides high resolution, dot addressable graphics.

Other Anadex products now being introduced by Wilkes include the high throughput DP-2620A line printer and low noise DP-9500A series line printers.

The WP-6000 has an 18-wire printhead and meets hard copy requirements with four combinations of print speed and quality: true correspondence (150-180 chps), draft (2[illegible] chps), enhanced data processing (200-330 chps) and standard data processing (300 chps).

Correspondence quality printing is available at either 10 or 12 pitch, or with proportional spacing. There are three resident fonts while additional character sets can be added or down-loaded from the host system. Subscripts, superscripts, double width and simultaneous underlining are all provided as well as italics. Pitch and character style changes can be made within the same line.

Full text formatting facilities are available, including justification, single/double columns, horizontal and vertical tabs and variable line spacing. To ensure compatibility with existing software packages, a Diablo emulation mode is selectable.

Wilkes Computing (CW), Bush House, 72 Prince Street, Bristol BS1. Tel: (0272) 25921.

Property management system

A COMPREHENSIVE property management system launched by Geest Computer Services is based on Texas Instruments minicomputers.

The system, which has been designed to be used by property managers rather than computer specialists, covers most management, financial and reporting functions.

The system creates and amends files containing details of properties and leases and produces reports based on that information, either on a fixed cycle or at the user's request.

The online reporting facilities enable a user to obtain reports on items such as company or site details, individual properties, and individual leases. The monthly management reports include reports on rent reviews, vacant premises, options, and amended property and lease details.

The rent demands section of the system calculates the rent and other fixed charges due from a tenant under the terms of a lease. It also creates and posts the financial transactions to the ledger and prints the rent demand [illegible] current calculations and unpaid amounts from previous demands.

The system has a flexible enquiry facility, enabling the user to obtain details of policies by insurance type, within a collective policy number, or which are due for renewal.

Geest Computer Services (CW), Vicarage Farm Road, Peterborough. Tel: (0733) 51331.

COMPUTERS AND RADIATION

AS the Cold War begins to beat up, manufacturers of computerised electronic equipment are becoming increasingly worried about the vulnerability of their components to nuclear radiation.

The major semiconductor manufacturers are all interested in research on "radiation hardening", some more than others. But chips which are truly radiation-hard are still some way off – and seem to be getting further away, because the higher the circuit density, the more sensitive the circuit.

This is best illustrated by tests carried out at the *Ministry of Defence's Atomic Weapons* Research Establishment on various semiconductor devices which showed bipolar devices to be more robust to the effects of various levels of gamma radiation and neutron doses than the more modern metal-oxide-silicon (MOS) circuitry.

The British-made Ferranti F100-L bipolar 16-bit microprocessor was also found to be the most resilient to radiation effects out of the other bipolar microprocessors tested.

But if weapons are to become more complex, *the component count must be reduced*, giving rise to the need for large-scale integration, and bipolar technology cannot keep up in the LSI race.

Where complexity is not needed or space is not at a premium, the other alternative is to replace sensitive semiconductor components with old-fashioned electromechanical components.

Dr Graeme Wilkinson explains the background to this issue.

Is your micro memory nuclear hardened?

*THERE has been much public de*bate in recent months over the issues behind Britain's nuclear weapon policies and the value of our current defence plans. Justifiably perhaps, such issues do not usually find their way into the columns of computer journals.

There is, however, one particularly subtle and, as far as computers are concerned, catastrophic effect of nuclear explosions. This is the phenomenon known as the nuclear electromagnetic pulse (EMP), an effect which has such a long range that a mainframe based in London could be permanently damaged by a nuclear explosion over West Germany.

During the first microsecond of a nuclear explosion, intense gamma radiation emitted by the nuclear fission and fusion reactions can knock the electrons out of the atoms in air molecules thereby creating a massive burst of electrical energy.

Although the amount of energy which is radiated in this form is negligible compared with the other forms of energy release (such as blast and heat) the EMP is extremely short-lived (about a hundred-millionth of a second) and can give rise to a peak power of up to 10 Megawatts per square yard at the Earth's surface – about 7,000 times the power of incoming solar energy.

Such a violent burst of radio energy can readily induce excessive voltages and currents in electrical conductors and hence cause permanent damage to many forms of electronic equipment.

Electrical equipment can be damaged in one of two ways by EMP. Firstly, strong currents can be directly induced in components by the high electric and magnetic field strengths; secondly, excessive current pulses can be fed into them by external conductors such as power and communication lines or else from antennas which act as ideal pick-ups.

Unfortunately for the computer world, modern integrated circuits are among the most vulnerable electronic components when it comes to EMP. Even chips of less than 1 cm in size are able to pick up sufficiently large voltages to cause them permanent damage.

Microprocessor memories are therefore highly vulnerable. Damage to RAM may not be the end of a system, but damage to either ROM containing essential operating instructions or to the CPU will render a computer totally inoperable, requiring hardware replacement.

A single nuclear explosion detonated high over central England could bring down the entire national grid, destroy our telecommunications systems, many domestic radio and TV sets, and the majority of the nation's computers. Such an explosion would do little collateral damage to buildings or to humans if detonated high enough, except for the effects of any radioactive bomb fragments which find their way back to the ground.

Protection against EMP, a procedure known as hardening, can be achieved in one of several ways. For example, sensitive electrical components such as semiconductor microelectronics can be replaced by less sensitive ones such as old-fashioned radio valves (which can resist current surges about a million times greater).

Also conducting cables can be replaced by non-conducting optical fibre links. Equipment can, in addition, be screened either by surrounding it with a conducting box (a Faraday Cage) or by installing it underground.

Current surge arrestors can be fitted on transmission lines although they must be specially designed for the purpose; standard lightning surge arrestors are simply not able to react fast enough to stop the effects of EMP.

Test equipment has now been designed for simulating EMP and for examining its effect on components. For example the Pets1 and Pets2 simulators at AWRE Aldermaston are used to test anything from a small box to a vehicle loaded with communication equipment.

Since the cessation of atmospheric weapon tests, simulators have provided the only means of carrying out EMP experiments. It is not good enough when evaluating equipment to test only individual components. The entire apparatus must be tested because of possible interaction effects and coupling, and because of this each circuit will behave intrinsically differently from any other.

Initially equipment is tested by passing high-level currents into it. Components which have ceased to function can then be isolated and individually tested and, if necessary, replaced.

When the equipment can successfully survive an excessive current injection it must then be subjected to a high level electric field to test its susceptibility to pick-up. Such a test is essential before equipment can be designated EMP-safe.

In practice, high-level electric fields can be generated by long wire radiators consisting of dipoles with a spark gap to which is applied a high voltage. When the gap reaches breakdown voltage it begins to conduct and a rapidly rising electromagnetic field is created.

Such tests have shown that equipment can be reliably EMP-hardened with techniques such as those described above, and that provided EMP survival is considered at the design stage, equipment can be manufactured with full protection for little extra cost, perhaps 5% extra (although it is clear that replacement or hardening of existing equipment would be a very costly procedure).

Most civilian computer equipment in this country has no protection whatsoever against EMP, although it is clear that in military circles the possible threat is being taken somewhat more seriously. During the first week of October the Greater London Council opened its nuclear bunkers for wartime controllers to the general public.

Visitors to these bunkers may have been surprised at the apparently antiquated state of the communications equipment inside them: teleprinters, old-fashioned relays, etc – there wasn't a single microchip in sight. The reason for this is almost certainly EMP survival and is not simply one of economy.

A Russian Foxbat fighter plane was recently turned over to the Americans in South Korea when its pilot defected. After close inspection by experts it was discovered that its avionics components were primarily miniaturised radio valves – again, EMP resistant.

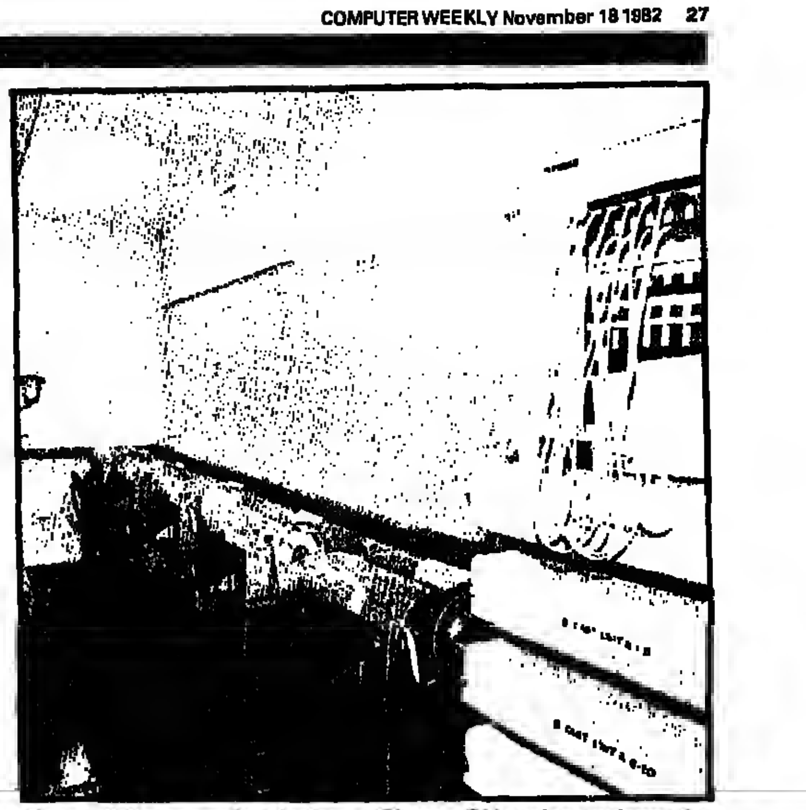
In Norway, the newest and most important telecommunication centres are now being built underground for EMP protection. The Swiss, too, have installed their most vital computers 600 metres under the Alps. But in the UK, the threat is not perceived as being of sufficient importance to merit the hardening of standard commercial computer equipment, and perhaps justifiably.

In recent years we have come to rely heavily on computers to control transport systems, communications, and all major financial transactions.

A society dependent on the microchip is an extremely vulnerable one. What is perhaps more worrying is that until *all* military communication links and computers are effectively protected, the use of high altitude nuclear bursts generating EMP over a wide area could cause many vital command and control mechanisms to fail at a crucial moment in a crisis.

This in itself could lead to a tragic and uncontrolled escalation of nuclear conflict and is one reason why many defence experts, including the late Lord Mountbatten, do not accept the concept of "the limited nuclear exchange" as a realistic scenario for any future European war.

Dr Graeme Wilkinson is co-author of London After the Bomb (Oxford University Press, 1982).



Comms desk at a nuclear bunker in Cheam. Old equipment is tougher.

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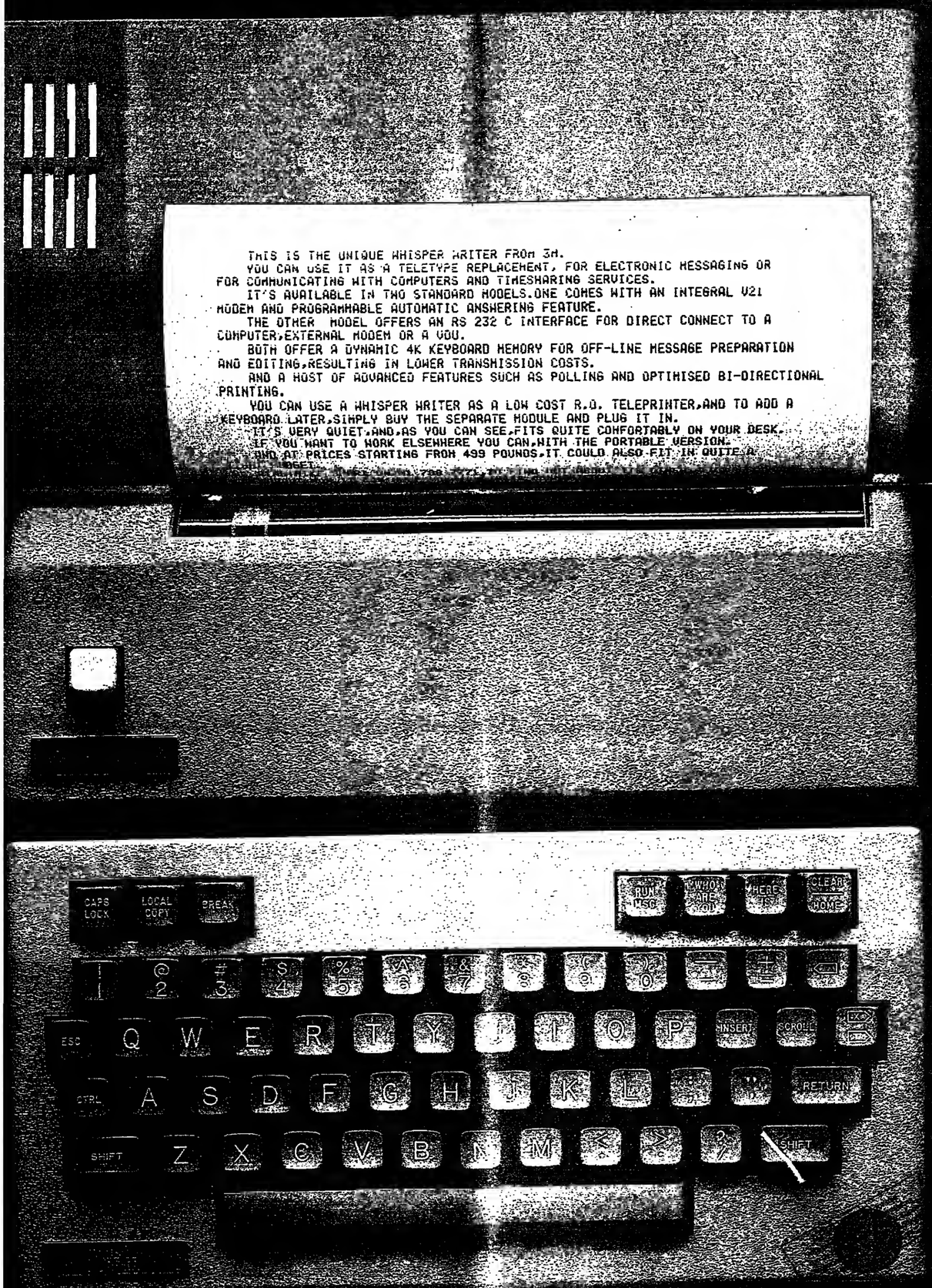

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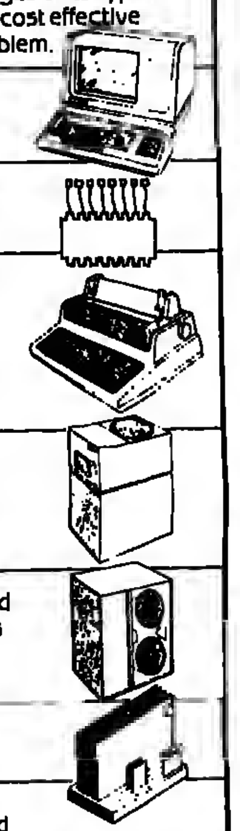

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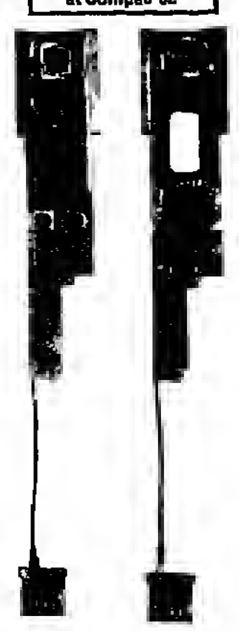

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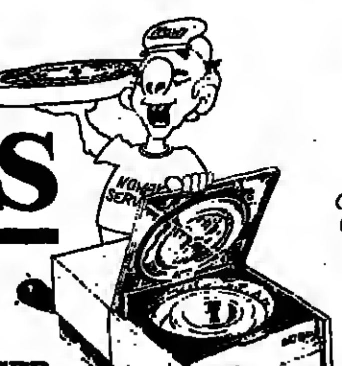

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This advertisement is directed towards experienced systems sales professionals who seek selling responsibility for major vertical markets. Data Logic, one of the UK's leading systems houses, is augmenting its software systems sales by recruiting key executives, who will concentrate on selling managed and turnkey projects to the government, food/drink distribution, insurance and banking sectors.

This recruitment heralds an important new business drive and we are looking for men or women with proven records in sales plus the enthusiasm to lead from the front. Technical support at Data Logic is excellent, freeing our sales people to concentrate on the task in hand: developing and converting high-value systems contracts with significant computer users and prospects.

We would like to meet you if you have at least 5 years' experience selling in one or more of these sectors for a major manufacturer or software/systems house (mainframe and substantial mini applications preferred), and are attracted by on-target earnings of up to £25,000 plus car, BUPA and other benefits. Assistance with relocation to the west of London area may be available.

To find out more, ring David Robinson on 01-578 9111 (or, outside office hours, our recorded answering service on 01-575 6195). Alternatively, write enclosing full c.v. to Data Logic Limited, 320 Ruislip Road East, Greenford, Middlesex.

Data Logic
A Raytheon Company

Towards the total system.

(1585)

DALROTH

IN SAUDI ARABIA

Our client, a Saudi Arab subsidiary of a major US Corporation, have recently been awarded an exciting new contract in the Eastern Province of Saudi Arabia which entails the setting up from scratch of a new D.P. Department. They have installed an HP 3000 Model 64 and require the following people, all of whom should have HP 3000 experience, ideally gained on Model 64.

SYSTEMS MANAGER/DP MGR Tax Free £17.5-24K + car
With 10 years' DP experience, five years of which should have been gained in a large HP installation with interactive, local and remote terminals. Familiarity with MPE and IMAGE would be useful.

SYSTEMS ANALYST Tax Free £15-21K
Five years' experience including MPE, IMAGE and COBOL gained in either Financial, Inventory or Personnel application areas.

PROGRAMMERS Tax Free £14-18K
Extensive experience of COBOL in the same application areas as above; for one position FORTRAN would be required.

DATABASE ADMINISTRATOR Tax Free £15-21K
Four years' experience as DBA or equivalent using IMAGE, including design and data dictionary integration.

TELECOM SPECIALIST Tax Free £15-21K
To plan and support a network of 30 local and remote terminals. You will need good experience of HP 2622A and LYNX terminals, line protocols, modems, etc.

All the above positions are available on two-year renewable single status contracts and include free accommodation, free food, excellent medical care, regular paid UK holidays with free first class air fares. In total this company offer a compensation package which is unrivalled elsewhere in the Middle East.

For further details phone Colin Masien on 01-493 2947 days or 0480-214893 after 7.30 pm quoting ref: 9942.

DALROTH & PARTNERS LTD, 4 HALF MOON STREET, LONDON W1

(1714)

TOP JOBS

European Development Manager

IBM System 34/38 Environment

Starting salary around

£14,000 p.a. plus car

and other benefits

Our client is Granada Group Services, whose headquarters are in Bedford. From there systems are developed to run on locally operated System 34s in Sweden, Denmark, France, Switzerland and Italy. There is also some involvement within the German company. We are looking for someone who has in-depth knowledge of the IBM System 34 range. Experience of System 38 would be a very great asset. The successful applicant will be a good manager, who is confident of his technical skills – someone who will generate confidence with users in the European countries mentioned.

The European Development Manager will be expected to travel fairly regularly throughout Europe, at the same time ensuring that systems developed in Bedford are properly controlled. The ideal candidate will have sound experience in the financial and commercial systems areas.

This is an excellent opportunity offering a very real challenge in an exciting development area.

Please send curriculum vitae to John Goldsmith

JMG RECRUITMENT LTD.
Sentry House, Frimley Road
Camberley, Surrey
Tel: Camberley (0276) 28213
Telex: 858386

(1702)

AUSTRALIA

We have been retained by the
Datapoint Corporation of Australia
to fill a key position in their rapidly-growing organisation.
The post is that of

SALES DIRECTOR

($A90,000 on quota package)

The Sales Director is responsible to the Managing Director for five sales regions within Australia; for setting quotas for bookings, revenue and profits; and for directing the overall marketing strategy. He will also have a personal involvement in major bids.

The successful applicant will have an extensive hardware sales background, preferably encompassing both mainframes and mini computers, and involving networking/telecomms. Experience of sales management is highly desirable.

This is a rare opportunity to join — at top level — a well-established and successful manufacturer in the growing Australian market.

The earnings package, which is equivalent to £50,000 on quota, reflects the importance of this key position. If you are confident of your ability successfully to fill this demanding role, then contact Graham Brownlie at:-

STRAND COMPUTER RECRUITMENT LIMITED
40A CASTLE STREET, GUILDFORD
SURREY GU1 3UQ
TELEPHONE: GUILDFORD (0483) 34444/5

(1690)

alba

Aluminium Bahrain (ALBA) is the major aluminium producer in the Arabian Gulf. Established in 1969, the company now employs some 2000 local and expatriate staff. Current major expansion creates a rewarding opportunity for a:

Senior Programmer

COBOL

Benefits in excess of £17,500 net of tax† BAHRAIN

to make a significant contribution within a 3 year contract to the company's established central computer department. Set up in 1974, and now employing upwards of 30 staff, the department is involved in the development of on-line systems on an IBM 4331.

Candidates should have a minimum of 3 years' COBOL experience; VSAM or CICS knowledge would be an advantage. Program development will be on-line using I.C.C.F.

Salary, at present totally tax-free and freely transferable, will be negotiable in a five-figure range.

In addition, substantial married status benefits include: • 32 working days' annual leave plus 12 days of public holidays • rent-free furnished air-conditioned accommodation • full recruitment and repatriation expenses • annual return air fares for employee and family • assisted education for children • free medical care and life assurance.

†Benefits calculated at current exchange rates.

Bahrain is a stable country with a liberal government. English is widely spoken and the company is experienced in the rapid and smooth entry of expatriate staff into the local community. Extensive sports and social facilities exist.

Please write with full details to: K.W. Rowe,
Alba Smelter Services Limited, Standbrook House,
2-5 Old Bond Street, London W1X 3TB.

CTL Going Far

To you it is a question, for CTL it is a statement of fact. Already Britain's fastest growing mini-computer manufacturer, in one year alone our profits and turnover have increased greatly, thus enhancing our reputation of being a 'top performar' in the computer industry.

Of course, our impressive growth has baen achieved largely thanks to our products, most notably the highly advanced 8000 mini-computer series, with the Momentum resilient non-stop processing system, both conceived, planned and developed to precisely meet the demands of a highly competitive market place. Combine these with our revolutionary new 32-bit mini, currently in its final stages of development and you'll begin to see that CTL has found the formula for success, and why we have such confidence for the future.

Confidence based not only on the technological excellence of our products but also on the exceptional calibre of our personnel.

CTL is on its way to the top, and we need your experience and professionalism to help take us there.

Systems Consultants
basic £11-13K+bonus+Car

This is a unique challenge, and one which will broaden your already substantial systems support experience to the full. Acting in a consultative role, you will identify user requirements and provide full technical support, both pre and post sale, to the Public Sector sales team. Using your knowledge of mini and mainframe computers, you will also establish profitable new business opportunities and ensure optimum CTL exposure within the marketplace.

Quality Engineer
c.£9K

Qualified to HNC in Electrical Engineering, with related experience in computers and associated equipment, you will monitor product quality and reliability, carry out reactive field analysis, and participate in product introduction programmes.

Resident Engineer – Central London
c.£12K package including shift allowance+ car

You'll be involved in ensuring preventative and corrective maintenance of CTL systems on site, planning systems installation, and resolving electro-mechanical/electrical product faults. If you've 3/5 years related experience in mini/mainframe systems and HNC in electronic or electrical engineering, we'd like to hear from you.

Computer Sales Executive – Birmingham
c.£24K package+ car

With comprehensive regional and software house support behind you, your solid background of sales success and the superb 8000 series to boot, this is a first-rate opportunity to tap and develop a high growth potential territory.

Medical Sales Executive – S. England
c.£20K package+ car

As a fully fledged, successful salesperson with a proven track record selling mini-computers preferably in the medical or related fields, you will be responsible for leading all sales activities to identify prospects and maintain profitable business links with customers. A high visibility role this one, calling for excellent organisational techniques.

Languages Group Leader
c.£15K

A high visibility project management role, you will be involved in converting system requirements into a practical language strategy, directing software development on one of the few original 32-bit mini projects in the UK. You'll therefore need to be a Graduate Computer Scientist with 4 years experience in a manufacturing, systems house or end-user environment and experience of man management and compiler development.

Senior Programmer
c.£12K

Qualified to Degree level with design experience in communications, you will aid in the definition, implementation and support of CTL's current and future communications systems. Besides having a thorough knowledge of Assembler, you'll need to know more than a thing or two about LANs, X 25 or SNA.

Senior Technical Author
c.£10K

Responsible for the preparation of technical documentation for CTL's software and hardware products, you will need a good solid background in electronics and 2/3 years experience of software documentation.

Marketing Product Manager
Momentum Software
c.£13K+ car

A unique opportunity to develop your marketing skills, interfacing directly with the product development teams, the company's senior management and, of course, the sales team. Thus you will be expected to significantly increase the company's product strategies in addition to packaging, promoting and communicating the product to the outside world. This position relates to CTL's software for transaction processing, database and office automation. Experience in these areas coupled with high levels of creativity, communication skills and personal motivation are required.

Marketing Communications Manager
c.£15K+ car+ bonus

You have considerable experience of Promotional/PR activities in the computer systems or services market. Preferably, you have knowledge of mini-computers & applications software, in addition to good communication, high leadership qualities and organisational skills . . . then, we need you to take charge of presenting CTL's corporate capabilities to the marketplace.

Contracts Assistant
c.£8½K

If you've experience in handling Sales, Licence or Service Contracts, (preferably in the computer field) then we'd like to hear from you. You'll be involved in the presentation of complex sales contracts for our high cost capital products therefore you'll also need a knowledge of the legal aspects of contractual agreements.

Obviously, there is far more to the story than this, so to find out more about just how far CTL is going and how you will fit in phone **David Drake** on **(0442) 3272**, alternatively write enclosing full personal and career details to: **Personnel Department, Computer Technology Ltd, Eaton Road, Hemel Hempstead, Herts.**

All positions are based in Hemel Hempstead unless otherwise stated.

CTL Computer Technology Limited

ITL An Information Technology Company

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FREELANCE & PERMANENT VACANCIES

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Analysts with Finenciel beckground and IMS DB/DC and ADF
Anelysts with Insurance or Assurence
BURROUGHS 6800 Analyst/Progremmers
CIS COBOL Programmers
CORAL 66 Progremmers, eome with MACRO II DATA GENERAL Business Besic or Assembler
HONEYWELL DM IV COBOL Progremmers
HONEYWELL LEVEL 64 DPS4 with IDS/TDS COBOL Progremmers
IBM DATABASE Administretor with CICS/DL1
IBM SYSTEM Progremmers
IBM PL1, IMS
IBM OS COBOL some with TSO/SPF
IBM COBOL with IMS DB/DC some with ADF
IBM COBOL with CMS or ICCF
IBM 8100 DPCX Programmers
IBM NOMAD Anelysts/Programmers
IBM COBOL CICS/DL1 Programmers
IBM MANTIS Programmers
IBM PL1 some with CICS
IBM PL1 and FOCUS
IBM MARK IV Programmers
IBM SYSTEM 38 RPG III
IBM OS with DATA MANAGER
ICL VMEB, IDMS or TPMS System Proge
ICL VMEB Analysts, some with IDMS or TPMS
ICL 2900 VME Technicel Support, ell levels
ICL SYSTEM 10 or 25 ASSEMBLER
ICL Gill Macro-Writer with MOP COBOL
JCL Manager Expertise
MICHAEL JACKSON structured programming techniques with COBOL
PAYROLL expertise Anelyst/Progremmers
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Technical Author DEC ASSEMBLER
UNIPAY Anelyst/Progs with PL1
UNIVAC 1100 DMS COBOL Progremmers
VAX SYSTEL expertlee
VAX VMS DATATRIEVE Analyst/Progs

Contact: STEVE WHITING, STEVE CASEY, KEITH TAYLOR, PETER HOLLIDAY, CHRIS WHETHERLY, DAVE LONGHURST, DEREK WADHAM or SANDRA CAREY

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Contact: BILL EVANS

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6 months + assignmenta

ANALYST/PROGRAMMERS
PL1 IMS DB/DC, TSO/SPF or MARK IV
– Urgently rsquired

HOLLAND
URGENT: Programmer/Analyst
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IBM PL1 with IMS DB/DC
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Contact: NEIL SMITH or KAREN LONGCROFT

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VAX VMS Ops
OPS ANALYST with DATA MANAGER exp

Contsct: ALAN PAINE or CHRIS MAGEE

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Due to our own Internsl expsnsion we sre currently seeking FIELD SERVICE ENGINEERS with MINI/MICRO experience, to be bssed at our Farnborough Offices, to £10 K + Car.

For further Informstion contsct Peter Lsmb.

DATABASE Administrator with DATA MANAGER Project Lesders, Anslysts snd Programmers to £13 K West London, preferably with IBM bsckground but will consider any strong COBOL experience. Contact Peter Jezeph for an immediate, confidential interview, or write enclosing s detslled c.v.

TRIDENT COMPUTER SERVICES PLC

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Tel: Farnborough (0252) 516141

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BIRMINGHAM B26 3PS.
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Three senior software professionals with VMS or RSX experience, an appreciation of hardware and sound commercial awareness.

Digital Equipment, the inventors of the minicomputer and the world leeders in this field, have built a highly successful division called COMPUTER SPECIAL SYSTEMS. Thie includes e group of hardwere end softwere experts who are dedicated to meeting the special requirements of our customers. Our knowledge end expertise has leunched us into the future on e number of fronts. Within the intensive high-technology environment of the Engineering Department, we ere engaged upon the design, development and implementation of new generetions of graphics and peripheral products. It is due to the success of this operation thet we need to appoint to our existing team, three senior softwere professionals who possess a detailed working knowledge of Digital equipment opereting systems to Mecro level.

It is essential that all three professionals are qualified to degree or equivalent level and ere prepared to work in a multi-disciplined team.

Principal Software Engineer **c.£12,000 pa + car**
You would undertake technical leadership for the direction end specification of software, within the development sphere. Software development may be either internally or customer generated and your role will certeinly involve liaison with corporate engineering, marketing end hardware functions. Your track record of et least eight years must include proven innovative skills, problem-solving ebility and experience of top level presentations. You are probably in your eerly thirties end seeking a challenging career development opportunity.

Senior Software Engineer — Development **c.£11,000 pa**
Your role is total project implementation and leedership. You will design and develop eoftware from functional or cuetomer specifications, using a high degree of innovation end an ewareness of e competitive marketplace. Ideally, you will heve at least six yeers' experience within a software engineering function and possees good tesk-menagement skills.

Senior Software Engineer — Support **c.£11,000 pa**
You will provide beck-up softwere support at pre-sales and warranty stagee, including the up-grading of producte to new DEC releases end eupplying a technical conaultancy eervice during product support planning. Good interpereonel skille are vital ae your role involves customer interfacing. With a minimum of eix yeers eoftwere engineering experience, you are probably in your mid to lete twentiee.

The career satisfaction inherent in these positions will be matched only by large company benefits and the rewerde, not leest of which is the membership of a succeeeful teem in en exciting growth erea with e progreesive company.

For further information and en epplicetion form, pleaee ring: David Baker or Will Morrieh on Reading (0734) 387025 or 387005 or 387017. Alternatively send e full c.v. to David Baker, Digitel Equipment Co. Limited, PO Box 131, Reading RG2 0TS. Ref: R/CS/018.

digital

Shubrooks

PROJECT MANAGER **£13K**
Berkshire
Working for a manufacturing company, the successful applicant will have proven experience of project management, preferably having worked in a manufacturing environment, with experience of DL/1, Real-Time and Database Design

APPLICATIONS PROGRAMMER **To £9K**
Hampshire
An opportunity for the right applicant to move into the technical support area of this Univac 1100 financial organisation.

SENIOR ANALYST PROGRAMMER **To £12K**
Middlesex
Major manufacturing company with large IBM mainframe. Applicants must have a minimum of 5 years in D.P. of which at least 2 years will be on CICS, as well as a knowledge of analysis and design. This is a demanding senior position with an excellent benefits package.

PROJECT LEADER **To £12.5K**
Middlesex
Working for a leading manufacturing company, entering a new phase of systems development, the person appointed will be a self starter capable of motivating a small team and responsible for the development and implementation of the company's manufacturing system. Experience of production and process control is essential

PROJECT LEADER **To £14.5K**
South East England
The successful applicant will be in their early thirties, preferably with an ICL background and previous involvement of on-line system, together with experience in a supervisory position, either in an insurance or financial environment.

ANALYSTS **To £13.5K**
North West London
A large retail organisation offering good career prospects to Analyst with previous experience of working in a sales or financial environment with sound DL/1 experience.

SENIOR SYSTEMS ANALYST **To £12.5K**
South East England
Experience of large ICL hardware and on-line systems to act as deputy to Project Leader working for large insurance organisation.

SENIOR PROGRAMMER **To £10.5K**
North West London
A manufacturing company in Middlesex wishes to appoint a Senior Programmer with a minimum of 4 years' COBOL programming experience on Honeywell Level 66 hardware ideally with GCOS, IOSI or IDSII, TDS and TP experience would be an advantage.

PROGRAMMER **To £7.5K**
Buckinghamshire
An opportunity exists for a Programmer with a minimum of 1 years' COBOL experience, ideally on Univac 90/30 hardware, working in a commercial environment.

For further details please contact: Bridget Kotchie, Shubrooks Recruitment Services, Almners Priory, Almnars Road, Lyne, Nr Chertsey, Surrey, KT16 0BH. Telephone: Chertsey (09328) 66812/67531
Licence No. SE5806.

LWCR
London West Computer Recruitment

Junior Project Leader
Cheltenham £9–10K.

A first class career opportunity with a financial services organisation exists for an analyst/programmer looking for progression. Success as a project leader of the first small project will lead to wider responsibilities on a large, dual Honeywell installation running a range of financial system applications under GCOS.
The successful applicant will have 4–5 years' experience, a knowledge of COBOL and will currently be earning at least £8.5K. A degree, or an HND level qualification is required. Relocation assistance is available. Ref: W504

IBM Programming Consultants
West London £7–12K.

A market leading computer services organisation is seeking high calibre programmers and analyst/programmers with IBM experience at all levels of seniority to join their large professional services division. Work assignments on a wide variety of projects will at times involve some UK travel. Successful applicants will be experienced in IBM PL1 or COBOL, and CICS, and will have a degree or professional qualification.
The company has an excellent track record and has ambitious plans for the future. These positions therefore offer considerable potential for career advancement. Ref: L103

Micro Specialists
Cirencester Up to c.£11K.

A well established, independent company manufacturing specialist computer controlled equipment has two important vacancies: – a Senior Programmer to take charge of programming projects, and a Senior Analyst/Programmer to be responsible for customer liaison and for design of new features for passenger transportation systems. Both positions require a minimum of 5 years' experience, the ability to deal with complex file handling on micros and knowledge of Intel 8085 assembler or PL/M. A degree or equivalent qualification in computing, engineering or electronics is desirable.
These posts offer high technical interest with a company based in a most attractive Cotswold town. Relocation assistance will be provided. Ref: W505

Write or telephone: **London West Computer Recruitment**
Evergreen, Dountsey, Chippenhom, Wiltshire SN15 4JA
Telephone: (0249) 891114

DEVELOP IN SCOTLAND
Our clients are Scotland's most successful companies

Major expansion programmes have created career development opportunities for programmers, analysts, project leaders and software engineers of graduate calibre who have several years' successful experience in a commercial or manufacturing environment.

In particular we require project leaders and senior analysts for the implementation of financial and manufacturing control systems.

Developments include all major financial systems; office automation and communications; build to order, Q.A., W.I.P., purchasing and receiving systems in online data base environments.

Most of our positions offer the choice of living in a city or in the country whilst working in an advanced technological environment.

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- ★ **Housing is plentiful and comparatively cheap**
- ★ **Sporting and recreational facilities are excellent**
- ★ **Educational facilities are second to none**
- ★ **Salaries are highly competitive**
- ★ **Career opportunities are outstanding**

For further details contact:

Niall Livingstone
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EDINBURGH EH2 2JG
031 226 6222 (24hrs)

CSA

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benefits package

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CMG (UK) Ltd - Personnel Director
will be delighted to telephone you to discuss opportunities available.

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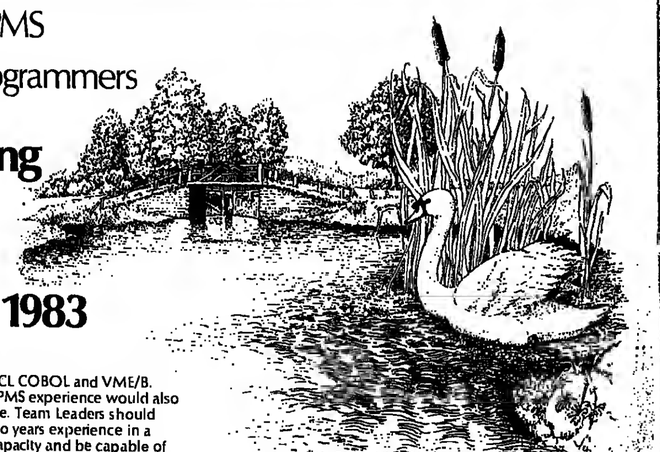
ICL · COBOL · VME/B · IDMS · TPMS

Team Leaders, Senior Programmers & Programmers



On contract and enjoying all the benefits of an idyllic working environment - make this your resolution for 1983

Here in the heart of Wessex, in a picturesque country town set on the banks of the River Avon, our Client has established a highly sophisticated ICL systems operation which is currently moving into a further period of exciting development. Hardware consists of 2 x 2956 and 1 x 2966.

Through forward planning, we are able to interview people now for 6-12 month contracts starting in January, February and March next year.

We shall be looking primarily for a minimum of three years experience plus a sound knowledge of ICL COBOL and VME/B. IDMS and/or TPMS experience would also be an advantage. Team Leaders should have at least two years experience in a team leading capacity and be capable of leading project teams of 3-4 programmers.

Whilst retaining your independence as a contract professional you will enjoy those benefits associated with working for a large organisation such as flexitime, subsidised lunches and social club amenities.

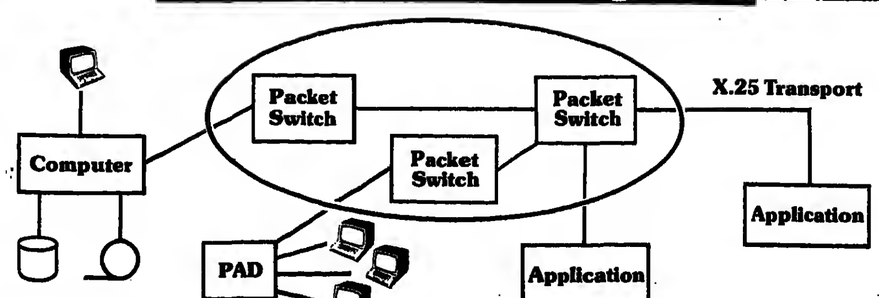
Accommodation is readily available and the location is easily accessible by road and rail.

To find out more phone Roger Perkins on 01-636 4213 or (049 481) 3460 after 8.00 pm or write to him at the address below enclosing if possible, a detailed CV, quoting reference LR/1023.

LBMS Recruitment · 22 Newman Street, London, W1P 3HB.

L B M S

X25 Network Development



Consultants/Team Leaders to £15,000 Senior Programmers to £12,000 Programmers to £9,000
Hertfordshire Based

Our client has just commenced work on the development of one of the largest multiple node networks of computer communications systems in Europe. Being a large successful manufacturing company they have the facilities and credibility to handle a project of this size. Early feasibility studies and planning phases are initiated but the main design and implementation teams will be newly recruited.
These are attractive opportunities for experienced software people to extend their existing skills. The range of people required accommodates those who may already be very experienced in communications to those who may have little to no communications knowledge but who are experienced systems software people. The team sizes will be small with tasks varying in complexity from state-of-the-art design problems to implementing new network management routines. There is no doubt that genuine software specialists will find the work stimulating and satisfying. We would be pleased to hear from anyone with technical programming experience who feels capable of making a contribution in this high growth sector of computing.
The company operates a contributory pension scheme with free life insurance and group rates to a private health plan. Relocation assistance where appropriate.

Apply in confidence to Terry Harvey by sending personal and career details, or contact him for an application form, evenings Gt. Missenden (02406) 4705 or daytime as below.

HR

H. R. Associates Limited

HR

Chance is a fine thing, but...

There is now a powerful alternative to the "roulette" procedure for selecting contractors.

The National Computer Contract Directory is now working. Both contractors and subscribers are NOW deriving major benefits:

FOR CONTRACTORS	FOR SUBSCRIBERS
1. Substantial increases in income. 2. Far wider choice of assignments. 3. Service completely free of charge!	1. Positive reduction in costs. 2. Access to a large central source of people AND information. 3. Total cost of approximately £1 per day!

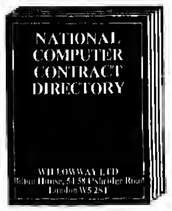
Computer users who would like to find out more about becoming subscribers, please ring Dan – 01-567 5801

Bringing contractors and computer users into direct contact, in a major and practical way, is the service the industry has been asking for. The National Computer Contract Directory fulfils this need and is becoming the standard tool for anyone whose job it is to resource a project.

Subscribers to date include BANKING, INSURANCE, MANUFACTURING, FINANCIAL, SOFTWARE HOUSES, ELECTRONIC, GOVERNMENT, COMPUTER MANUFACTURING, TELECOMMUNICATIONS, AGRICULTURAL, PETROLEUM ETC.

FOR CONTRACTORS: Increases in income have varied from **£52** to **£123** per week.

FOR SUBSCRIBERS: Savings in costs have varied from **£50** to **£370** per week!



The National Computer Contract Directory uses technology to assemble and maintain a central COMPREHENSIVE source which is available to EVERY computer user.

It may be a fine thing but there is now an alternative to relying on chance!

Your entry will remain permanently in the directory. All you have to do is complete this form. It costs you nothing and gives you access to substantial increases in income and a wider choice of contracts.

THE DIRECT ALTERNATIVE

DIRECTORY ENTRY DETAILS

This section is not for publication. (Contact details are not released without prior consent).

NAME: –	
ADDRESS	
TEL. NO.:	
NO OF YEARS EXPERIENCE	
PREFERRED UK WORK LOCATIONS:	
WILL YOU CONSIDER WORKING ABROAD?	
WHEN WILL YOU BE ABLE TO START YOUR NEXT CONTRACT?	MONTH / YEAR

JOB CATEGORIES

CATEGORY	NO OF YRS	CATEGORY PREFERRED
PROGRAMMER		
ANALYST		
ANALYST PROGRAMMER		
SYSTEMS PROGRAMMER		
CONSULTANT/PROJECT MANAGER		
OTHER – SPECIFY		

HARDWARE EXPERIENCE (MACHINES)	MONTHS	PROGRAMMING LANGUAGES (E.G. APL, FORTAN ETC.	MONTHS	APPLICATIONS SOFTWARE (E.G. DCS, TOTAL ETC.	MONTHS	SYSTEMS SOFTWARE (E.G. DOS, MVS, ETC	MONTHS	APPLICATIONS (E.G. PAYROLL, ORDER ENTRY ETC.	MONTHS	ENVIRONMENT (E.G. BANKING MANUFACTURING ETC	MONTHS

FURTHER INFORMATION: (NOT MORE THAN 50 WORDS) PROGRAMMERS ARE ADVISED TO DESCRIBE THE DEPTH OF THEIR PROGRAMMING EXPERIENCE AND ANALYSTS SHOULD LIST THOSE AREAS OF SYSTEMS ANALYSIS IN WHICH THEY ARE EXPERIENCED I.E. FEASIBILITY STUDIES, SYSTEM DESIGN, PROJECT RESPONSIBILITY, USER INVOLVEMENT, MANAGEMENT EXPERIENCE ETC. IN ADDITION YOU SHOULD MENTION ANY SPECIALIST EXPERIENCE YOU FEEL IS RELEVANT TO THE CURRENT MARKETPLACE.

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IBM, OPERATIONS DEVELOPMENT AND SUPPORT
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Our clients, one of the countries leading retailers, is once again expanding its computer operation into the most sophisticated IBM System in the country. To expand their team they need specialists at every level for the operations development and support departments. Should your background not be directly relevant do not worry. If you have two years' COBOL programming or analysis background their outstanding training department would soon convert you. Reference GMF46/1

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A London based soft warehouse is currently seeking Honeywell COBOL Programmers to work on site at all levels of a London installation.

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COBOL PROGRAMMERS
City, Croydon, West London

A large Computer Services Company requires experienced programmers to work on Financial and Insurance applications. Two years' COBOL experience is needed and a knowledge of IMS/CICS would be a great asset for advancement. An interest in travelling would be helpful. Reference GMF46/4

SYSTEMS ANALYST
Surrey

A local Government Authority which acts as a service bureau to multiple users is currently recruiting a systems analyst with good commercial experience, ideally stemming from a programming background preferably IBM. Initiative and enthusiasm are of prime importance. Reference GMF46/5.

SYSTEMS PROGRAMMER
West London

An international computer services company with the most up to date equipment requires an MVS systems programmer. A minimum of two years' experience is required. Current IBM hardware is being updated to a 3081. Reference GMF46/6.

SENIOR PROGRAMMER
Surrey

A local government in authority which acts as a service bureau to multiple users is currently recruiting a senior programmer with some supervisory experience. PL/1 and/or assembler are essential requirements in a programmer who should have a minimum of 3 years' knowledge of CMS/CICS, DL/1 or mark 4 would be advantageous. Reference GMF46/7.

BURROUGHS COBOL
Senior Programmer

A central London based computer services company seeks a senior programmer with a minimum of two years' COBOL and Burroughs equipment experience. Candidates should have ideally a DATABASE and support experience. Reference GMF46/8.

All the above opportunities include permanent positions and carry a wide range of salaries and positions depending on location and experience. In the first instance please send us a copy of your CV (alternatively telephone for application form) so that we can discuss your application in confidence with our client on your behalf.

(1744)

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You Can Tell Our Company By The People We Keep

Edward H Conder After leaving school Edward joined the army and was commissioned in the East Anglian Regiment as a platoon commander, before going to the Army university at Shrivenham, then a London external college. After obtaining his degree he spent a further five years in the infantry before moving to the Royal Army Ordnance Corps. There he got involved with computing, initially on an EMI DEC 2400, then ICL 1900s. He spent three years teaching computing at the Defence ADP Training Centre. Edward eventually left the army as a Major to join Marconi Radar Systems.

Jill Ballinger After leaving school with 'A' levels in mathematics, physics and chemistry, Jill decided to take up a career in computing software. There followed six years with the Ministry of Defence developing program suites for various electronic research projects, during which she took HNC's in mathematics, statistics and computer studies. She then spent two years in private industry commissioning and trouble-shooting photosetting systems. She has now worked at Marconi Radar Systems for four years leading teams of programmers through the design, implementation and testing phases of a multi-processor real-time

Whatever the background, if you're a software specialist we're interested in meeting you. Primarily we are looking for senior staff to work as **DESIGNERS/TEAM LEADERS.** For these positions you should have at least seven years experience in systems and the ability to convey ideas and concepts in a real time environment. We are also interested in speaking to **SOFTWARE PROGRAMMERS** and **SOFTWARE ENGINEERS** with between 3–6 years experience including programming, systems design and implementation.

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Please contact the advising consultant on 01-399 9183 or write to us preferably enclosing your C.V. Ref: CW46/2.

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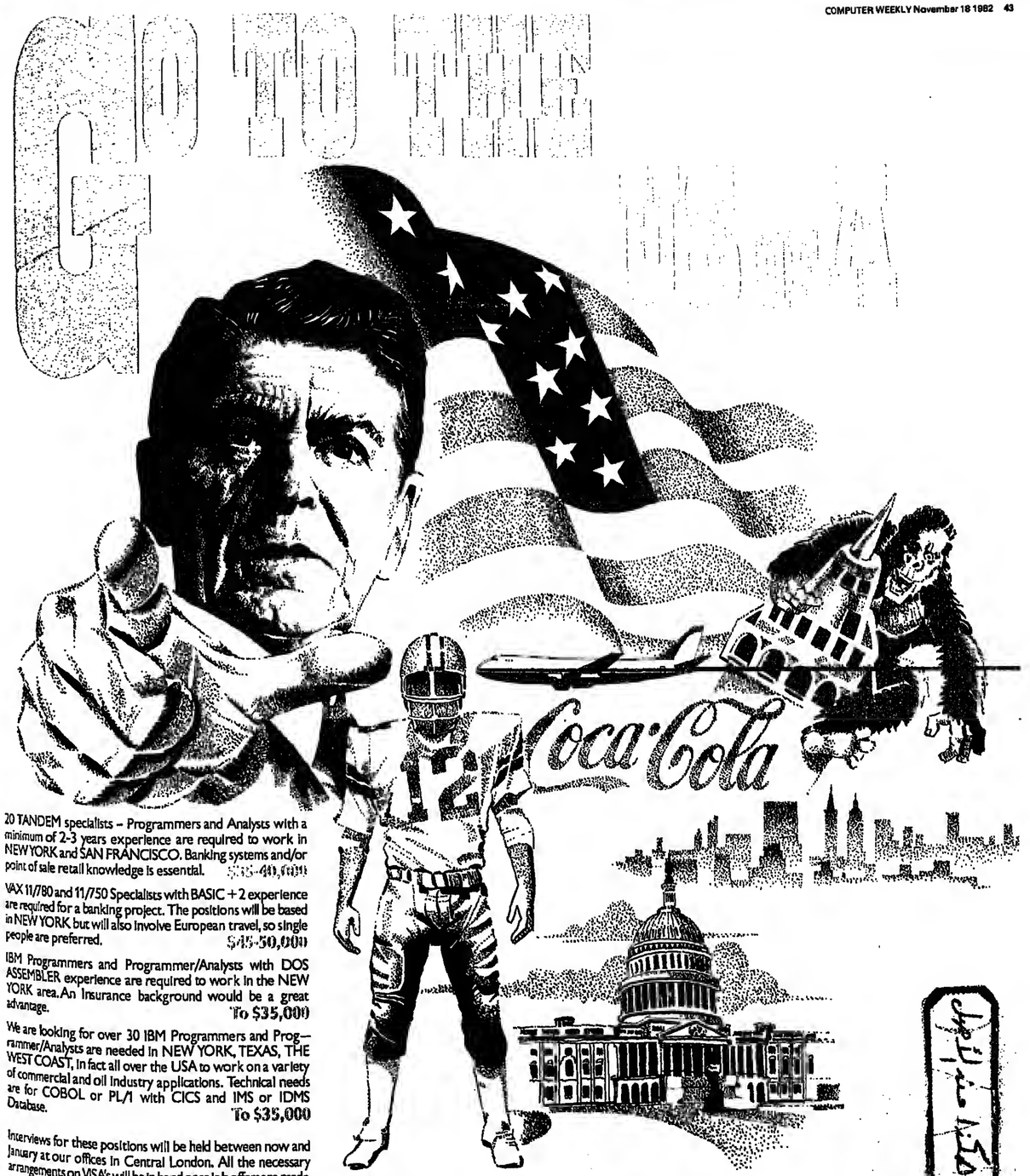

20 TANDEM specialists – Programmers and Analysts with a minimum of 2-3 years experience are required to work in NEW YORK and SAN FRANCISCO. Banking systems and/or point of sale retail knowledge is essential. $35-40,000

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We are looking for over 30 IBM Programmers and Programmer/Analysts are needed in NEW YORK, TEXAS, THE WEST COAST, in fact all over the USA to work on a variety of commercial and oil industry applications. Technical needs are for COBOL or PL/1 with CICS and IMS or IDMS Database. To $35,000

Interviews for these positions will be held between now and January at our offices in Central London. All the necessary arrangements on VISA's will be in hand once job offers are made.

In all cases you should telephone Janet Chilvers on 01-734 7394 during office hours or on 01-359 4997 evenings and weekends to register your interest in the positions. Janet will also be happy to talk to any other experienced people who would like to go to America.

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For immediate consideration and to arrange initial interviews, please call **Evelyn Harris** on **01-935 0671** during working hours or submit a detailed career resume to her at our London address if you prefer.

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(1577)

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PL/1 PL/1 PL/1
S.E. England **to £11,500**
I know you have heard it before but genuinely you are very fortunate if you have PL/1 and are looking for a move. We have a plethora of companies in Bedford, Cowley, Enfield, the City, Chesham, Slough, Maidenhead, Walton-on-Thames, eager to interview you and upgrade your salary. CW467

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LONDON & HOME COUNTIES TO £11,000
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RETAIL REWARDS IN WEST LONDON
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A project manager is required who must have DOS, Cobol, Systems Analysis experience and, ideally, some knowledge of stock control and the retail systems. Previous experience in a multi-site is obviously an advantage but not essential. What is essential is the desire to get the job done!

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The company also needs a well-organised individual to analyse the current systems at present running on the Univac computer and to assist in the implementation of new systems.

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Areas Preferred: First Choice .....

Second Choice.....

Experience to date: (Last Position First)

Company Name and Location	From Mth/Year	To Mth/Year	Duties and experience

Date..... Signature .....

Reg. No..... DATE..... CW 18/11

your appointments register

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London

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R. Davies, B.A.
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Sterling salary, depending on previous experience, could be up to £7,804 per annum (current pay award pending).

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for our patient administration team, based at Addenbrookes hospital, developing on-line patient administration systems for CTL minicomputers which have been installed at all major hospitals in East Anglia.

Designer/Programmer

to join a team concentrating on the implementation of on-line supplies and pharmacy systems based on a central CMC minicomputer. The post is based at Addenbrookes hospital.

Designer/Programmer

for our health care team based at Regional Headquarters to redevelop child health systems for an ICL 2966 mainframe running under VME and using transaction processing software.

Applicants should preferably be educated to degree level and have two to three years' systems and programming experience. Less qualified applicants may be considered on an initial lower salary scale.

Application form, job description and further details from the Regional Personnel Officer, East Anglian RHA, Union Lane, Cambridge CB4 1RF (Tel: 0223 61212 ext 325). Please state which post when applying.

Closing date: 3 December, 1982. (1707)

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Computer Operator
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In the course of reorganising the Data Processing Department in preparation for the future, vacancies for experienced operators have been created due to internal promotions.
A minimum of two years' relevant experience is required for the Operator post and three years' for the Senior Operator. A demonstrable knowledge of VME/B is essential.
The above earnings levels include shift allowances appropriate to the three shift system presently in operation.
The posts will be based initially at Sheldon, Birmingham with a move to Monkspath, Solihull planned for 1983.
Application forms are available from the Regional Personnel Manager, Severn-Trent Water Authority, Abelson House, 2297 Coventry Road, Sheldon, Birmingham B26 3PU.
Telephone 021-743 4222, extension 2076/2077.
Closing date for the return of completed application forms: 26th November, 1982.
These posts are open to both men and women.

(1683)

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E. Midlands – Salaries in the £8,000-£12,500 range
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SYSTEMS ANALYSTS/ANALYST PROGRAMMERS

W. Midlands area, to £13,000
Experience in IBM environment essential. Ideally experience in PL/1, CICS, DL/1, IMS, for scientific/commercial applications.

SOFTWARE ENGINEERS and PROGRAMMERS

Salaries from £8,000-£15,000
For various companies based *in London/*Home Counties, Europe, Scotland, Bristol areas.

SOFTWARE PERSONNEL

W. Midlands area, to £12,000
Experience in real time applications essential with knowledge of CORAL 66, PASCAL, MASCOT or ASSEMBLER languages.

SOFTWARE ENGINEERS

W. Country – Salaries from £6,500-£12,500
Qualified to at least HNC and with experience in Scientific software/real time systems. *Experience in CORAL 66 or PASCAL* or MASCOT essential.

For an application form, please send your coupon to George A. Lowl, Beechwood Appointments Register, FREEPOST, London, W3 9BR (no stamp required). Telephone 01-992 8847 (24 hours).

Name
Address

(1740)

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CHESHIRE COUNTY COUNCIL

COMPUTER PROGRAMMER FOR EDUCATIONAL PROJECT

This is a temporary post – full-time from 1st January to 31st July, 1983.

A programmer is required at Great Sankey High School, Warrington, to work with a team of teachers under an MEP funded project to produce five packages of Educational Software for the BBC micro-computer. Experience of micro-computers and machine code programming would be an advantage.

Salary at a rate of £5,600 p.a.

Apply by letter to:
The Headmaster, Great Sankey High School, Barrow Hall Lane, Great Sankey, Warrington, Cheshire.

Closing date 29th November, 1982.

(1724)

Dec or DG Analyst/Programmer

with some commercial experience. Salary to £9000

Write giving career details to:
The Managing Director,
Fortek Computers Ltd.,
Collis House,
Fort Wallington,
Fareham, Hampshire,
PO16 8TX.

(1728)

COUNTY COMPUTER SERVICES

ICL 2900 VME Systems Programmer

UP TO £10,860 p.a.

We require a man or a woman who has sound software background in a VME/B environment. Detailed experience of VME Base, superstructure, TPMS or IDMS would be an advantage.

Salary will be within the range £9,858-£10,860 p.a.

Commencing salary according to experience.

The Systems Programmers are responsible for the Operating Systems and general software on the County's ICL 2976 which services an expanding communications network, as well as for a 2960 and 2950.

Formal qualifications will be an advantage for this post. Computer staff enjoy good working conditions located near the river at Trentbridge. Housing is moderately priced and the area has excellent communications.

Relocation expenses will be granted in appropriate cases.

Contact the Deputy Computer Manager Peter Carrington if you wish to discuss this post or to receive an application form Tel: Nottingham (0602) 823 823 ext. 3060.

Closing Date 3rd December 1982. Please quote ref. 163.

Nottinghamshire County Council
County Hall, West Bridgford
Nottingham NG2 7QP

Factory Mutual System

BUSINESS ANALYST

Circa 13K **SW1**

Factory Mutual International is a large industrial insurance company, with emphasis on loss prevention, engineering, risk management and property conservation.

Within prestigious offices in Victoria, SW1, the Management Information Services Division runs an HP3000. They now wish to recruit a Business Analyst.

You will develop detailed systems solutions, produce business specifications for approval and technical development, liaise with computer system designers, develop detailed project schedules and advise users in implementation.

The successful candidate will have proven experience of seeing projects through from systems outline to implementation, be skilled in dealing with users at all levels and have had some previous involvement with user procedures. Experience of insurance systems and some knowledge of Data Analysis/Database is desirable, however, training will be given in this area.

The salary offered is around £13,000 and there is a substantial benefits package, including LVs, pension, B.U.P.A., season ticket loan and flexi-time.

Space is limited yet we have plenty more to tell you, so for more information please telephone Sandra Hersh on 01-734 7394 during office hours, or on 01-458 6988 evenings and weekends.

WARWICK WOODWARD

(1733)

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(1676)

Computer Supervisor IBM System 34

City – EC2 c.£9,000 + Benefits

Our client, Minicards Limited, is a highly successful and profitable member of a European group of companies involved in the design, printing and distribution of picture cards and albums. Our client has an IBM System 34 and is seeking a supervisor to take responsibility for all aspects of control of computer operations. The principal duties of the position will comprise:–

- Responsibility for the normal operation of the computer department, including start-up and close-down procedures, security, job scheduling, data control etc.,
- Systems development including advice on possible additional applications and liaison with the Sales Manager and Chief Accountant concerning user requirements;
- Supervision of operators.

It is envisaged that suitable applicants for the position will be over 25 and already have experience of IBM System 34's in some capacity. The ability to get on well with other members of staff is essential and some knowledge of programming would be an advantage.

The appointment carries a salary of circa £9,000 per annum, one month's bonus at Christmas and four weeks annual leave. The company operates a non-contributory pension scheme. Applications, giving full personal and career details should be sent in writing to:

N Warren-Smith Recruitment Division
Stoy Horwath Limited
Management Consultants
126 Baker Street London W1M 1FH.

(1706)

PLYMOUTH POLYTECHNIC

FACULTY OF TECHNOLOGY

DEPARTMENT OF MATHEMATICS, STATISTICS AND COMPUTING

SENIOR LECTURER/ LECTURER II IN COMPUTING

Salary: £6,855-£12,816

(Level of appointment and starting salary dependent upon qualifications and experience.)
Applicants for the above post should possess a good honours degree, together with appropriate industrial, commercial and/or research experience.
The successful candidate will be required to teach to honours degree level on the new Computing and Information degree course, and should be able to offer specialist knowledge in applications of information technology such as distributed processing, database systems, management information systems and/or business applications.
Application forms to be returned by Friday, 3rd December, 1982, can be obtained with further particulars from the Personnel Officer, Plymouth Polytechnic, Drake Circus, Plymouth PL4 8AA.

(1691)

BOX NUMBERS

Box number replies should be addressed to:

Box Number ....
c/o Computer Weekly
Quadrant House
The Quadrant
Sutton, Surrey SM2 5AS

Job Spot

dp Confidential reply
PROGRAMMER ANALYSTS TOP SALARY

Our client, a well known and established manufacturing company with locations throughout the UK have agreed a strategy increasing their commitment to DP services. Current hardware is based on two IBM 4341's running under DOS/VSE and the company would like to hear from Programmer Analysts with around two years' experience on IBM mainframes supporting Cobol. Candidates should have the ability to write and design systems in an on-line environment and a knowledge of CICS or DL/1 though not essential would be advantageous. In addition to an attractive salary, a range of benefits are available normally associated with a company of their standing.

LOCATION: OXFORDSHIRE JA308/1

HFC Trust
PROGRAMMERS to £8,500

HFC Trust Limited are a major consumer finance and banking service organisation with over 140 branch offices throughout the UK. Increasing business has created a requirement for a number of Programmers to complete a development team now implementing a system designed as the basis of a network supporting all the UK branches. Applicants should have 18 months' IBM COBOL experience, with a background in any one of the following areas – OS/VS1, JCL, CMS DL/1 or Easytrieve. In addition to salary there are a number of benefits normally associated with a financial institution including non-contributory pension, BUPA and free life assurance.

LOCATION: BERKSHIRE JA308/2

dp Confidential Reply
PROGRAMMER ANALYST to £10,500

One of the world's leading manufacturers and suppliers of photographic materials and equipment are seeking to expand with the addition of a Programmer Analyst. Ideal candidates will have spent a minimum of two years' programming in Cobol and had an exposure to analysis in a commercial environment. The current hardware strategy is based on a range of Honeywell equipment and therefore knowledge of GCOS and TPS6 would be highly desirable. A familiarity with the principles of IDSI would also be advantageous. In addition to salary there are a number of large company benefits which will include assistance with relocation.

LOCATION: CHESHIRE JA308/3

OCL
SYSTEMS PROGRAMMER £ excellent

Overseas Containers Limited, a world leader in container transport, *has a requirement for ambitious* ***Systems Programmers*** who are capable of exploiting their experience in an innovative and dynamic environment. The ideal candidate will have a thorough knowledge of DB and TP software (preferably IDMS, CICS and VTAM) and will form part of the TP support team. This team will be involved in major software upgrades to support an expanding TP network. Software plans for the coming year include installation of NCCF/TAF, ACF/VTAM version 2, MVS/SP3 and CICS 1.6. OCL offer excellent salaries and the usual benefits associated with a large organisation.

LOCATION: LONDON JA308/4

dp Confidential Reply
Systems Designers to £18,500

Our client has an international and dynamic reputation for designing and building fully integrated software and engineering systems. New orders have provided interesting opportunities for Systems Designers to work on the development of display and data handling systems for advanced technical applications.
The successful candidate should have around seven years' systems design and implementation experience, a developed understanding of real time software in a mini/micro environment, and an ability to convey ideas and concepts effectively. Additionally, some knowledge of hardware and electronics would be advantageous, but not essential. Company benefits are generous including relocation, flexible working hours and five weeks holiday.

LOCATION: ESSEX JA308/5

MPI
PROGRAMMER to £12,000

Microcomputer Products International are leading suppliers of software for CPM based micro's. Planned expansion has created the need for an additional **Programmer** to provide customer support and develop programs and systems, utilising an extensive range of microcomputers. The successful candidate should have gained around five years programming experience in a large mainframe environment supporting Cobol. In addition a knowledge of Assembler is desirable and applicants will be able to demonstrate effective user liaison skills. Salary is in a range according to experience and in addition to usual benefits this position will attract free membership of BUPA.

LOCATION: BARKING JA308/6

Action.. ring or send the coupon to
D.P. Recruitment Ltd,
Freepost, London W5 2ST
01-567 6501

Name ....
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We have vacancies for software specialists who can complement the skills and experience of our application designers.
We would expect candidates to have several years' experience in computing: relevant experience of VAX/VMS, Systel, System Measurement or support of operational tp systems an advantage.
For an informal discussion about the job please ring Theo Brueton, Chief Programmer on 01-247-5454 extension 815.

For an application form and job description contact: Personnel Department, The London Hospital (Whitechapel), London E1 1BB, Telephone 01-247-5454.

[1684]

Contractors

UNIVAC 1100 PROGRAMMERS

We have forthcoming requirements for UNIVAC 1100 COBOL Programmers at five sites
TIP, DMS useful but not essential for all jobs
Long term contracts
December or January starts
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Telex: 337045

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Salaries by negotiation.
Conditions of employment include LV's, P.P.P. and Non-Contributory Pension Scheme.

Please write with full career details and current salary to:
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Lifeguard Assurance plc,
Swan Court,
Petersfield,
Hants.

[1732]

CAE

Software professionals with experience in Ostebase software, Ostebase Applications or Graphics Ostebases for Computer Aided Engineering and Graphics Systems.
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We have design offices in Fareham, Manchester and Uxbridge in the UK and support offices in Arizona, California and Massachusetts in the USA.
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Please send your c.v. in confidence to either:

David Huxtable
Director
Cirrus Computers Ltd.
28/30 High Street
Fareham
Hampshire PO16 7AU
Telephone: 0329 285424

or

Richard Bosworth
Director
Cirrus Designs Ltd.
Somerville House
232/4 Stockport Road
Cheadle
Cheshire SK8 2EA
Telephone: 061-491 9769

Cirrus Computers Limited

[1680]

USA Very Urgent

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VAX COBOL

2 Systems Designers/Team Leaders
7 Programmers
6-12 month project
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Plymouth House, 7 London Road
Amersham, Bucks HP7 0HE

H. Programming & Systems Ltd.

[1708]

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Small new systems house with a proven range of products to sell, requires a highly motivated person to get in at the start. A low starting salary will be augmented by high commission and share in the equity. If you have a proven track record apply with C.V. to

Tempus Business Systems Ltd., Now Buildings, Station Road, North Field, Birmingham.

[1750]

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Calspina Limited is offering a unique opportunity to Computer Sales Professionals. We are a new organisation marketing the VECTOR and CIRIUS Micro Computer Systems, united with a large and very comprehensive Software Library. The position involves selling to a wide spectrum of businesses from qualified leads.

Working from a Home Base and supported by a Central Office team and local exhibitions, we need executives in all areas of Great Britain and one in Northern Ireland. If you are an experienced Sales Executive with drive and ambition, preferably with a background in Systems Analysis, we would be very pleased to hear from you.

We offer a basic salary, open-ended commission earnings and a company car.

Please apply: A. Gibson, Sales Manager, Calspina Ltd, 12/13 Sheep Street, Wellingborough, North Hants. Tel. 0933 228282.

[1675]

COMPUTER AUDITOR

Based in the West of Scotland
Scale rising to £11,199

The Commission which is responsible for the external audit of all Scottish Local Authorities, is seeking to fill a vacancy for a Computer Auditor in its Hamilton-based team. The work covers a wide variety of installations and offers the opportunity to gain valuable and extensive experience in computer audit techniques.
The successful applicant will probably be a graduate with post-graduate experience in programming and systems analysis, preferably in a financial environment.
Audit and Local Government experience is not essential as training will be given but it is important that candidates have the energy and flair to be able to contribute to the development of the computer audit role in a challenging and demanding environment.
A certain amount of travel is involved and it is possible that certain projects may involve overnight stays away from base. Suitable allowances are paid in this respect.
A generous removal and disturbance scheme is in operation in appropriate cases.
For an informal discussion contact Tom Pettigrew on Glenrothes (0592) 752777.
Application forms, which should be returned by 22nd November, can be obtained (quoting Reference B223) from:
The Secretary, Accounts Commission
18 George Street, Edinburgh EH2 2QU
Telephone 031-226 7346

[1621]

Accounts Commission

COMAG

PROGRAMMER/ ANALYST

Strong Cobol background plus Data Base experience

Salary: Circa £10,000 p.a.

Location: Uxbridge area

Our client is Comag, who are the largest independent magazine distributors in the United Kingdom, with worldwide distribution interests. Their small Systems Development Group is based in West Drayton. Hardware used is an NCR Criterion and a Data Base system using TOTAL has been developed.

Comag now wish to recruit a programmer/analyst who will:

* have between two and three years' Cobol experience
* have had some exposure to Data Base
* enjoy the challenge of working in a small team where initiative is welcomed
* be anxious to develop analytical skills.

Any candidate with experience of TOTAL would have a significant advantage. Future developments are significant. Comag use management services as an integral part of their company development, and the company is totally dedicated to data processing.

This is a particularly interesting opportunity for somebody who, whilst enjoying the small team environment, will benefit in experience terms from the major computer developments that are taking place. If you feel that you could make a contribution in this environment please send curriculum vitae to John Goldsmith

RECRUITMENT LTD.
Sentry House, Frimley Road, Camberley, Surrey.
Tel: Camberley (0276) 29213
Telex: 858386

CONTRACTORS

IBM

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IBM LARGE SYSTEM UNIPAY EXP. (CICS ADVANTAGE)	PROJECT LEADER
IBM OS/DOS PL/1 ADABAS NATURAL	ANALYST/PROGRAMMERS
IBM COBOL ADABAS NATURAL	ANALYST/PROGRAMMERS
IBM DL/1	DATABASE ADMINISTRATOR
IBM MVS	SYSTEMS PROGRAMMER
IBM DOS COBOL CICS DL/1 (JANUARY START)	ANALYST/PROGRAMMER
IBM SYSTEMS 38 RPG 3	ANALYST/PROGRAMMER

ICL

ICL 2900 VME/B IDMS TPMB	PROGRAMMERS
ICL 2900 VME/B IDMS	ANALYST/PROGRAMMERS
ICL ME29 RABGE COBOL MTS IOMS	ANALYST/PROGRAMMERS
ICL 1900/2900 EXP.	SUBINESS ANALYSTS

OTHERS

VAX COBOL (IMM. START)	ANALYST/PROGRAMMERS
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BURROUGHS MCP COBOL DM82 GEMCOS	PROGRAMMERS
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HP3000 FORTRAN	TECHNICAL PROGRAMMER
PRIME PRIMOS FORTRAN + OR – TOTAL (C. LONDON)	ANALYST/PROGRAMMER
CTL	SYSTEMS PROGRAMMER
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ANY MINI PROCESS CONTROL (HERTFORDSHIRE)	SYSTEMS PROGRAMMER
PROGRAMMERS WITH TANDEM EXP.	
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BURROUGHS B37/4700 MCP COBOL	ANALYST/PROGRAMMERS
MOTOROLA 68000 PASCAL	PROGRAMMER
MOTOROLA 6800 PASCAL	PROGRAMMERS
MOTOROLA 68000 ANY HIGH LEVEL LANGUAGES	PROGRAMMERS
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Computer Search Contracts

[1748]

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TO EUROPE AND THE MIDDLE EAST!

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Tandem Software Engineers c.£15,000 p.a.
A leading European software house wish to recruit software engineers with at least 2 years Tandem experience preferably with in-depth communications knowledge.

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Telephony Software Engineers to £25,000 p.a.
A large multi-national corporation require people with 3-4 years experience of system X or 12 with PL/1, Pascal and Assembler languages. One year renewable contracts. Accommodation provided.

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IBM Systems Programmers
A leading Italian software house require degree level candidates to take the following positions
MVS Systems Programmer – 4/5 years IBM Systems programming experience with fluency in Assembler and a high level language, preferably PL/1.
VTAM Systems Programmer – 2 years experience of on-line environment, good knowledge of SNA and VTAM 2 under MVS. Assembler language. Knowledge of IBM 3705, Modems and associated equipment.
DB/DC Systems Programmer – to design, install and maintain CICS/OS and DL/1 or IMS DB/DC system, define CICS interface, promote DB standards and produce CICS exits. Assembler mandatory. DB Dictionary knowledge desirable.

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DP/WP Salesmen £20-£30,000 tax free
We have several requirements for successful DP/WP Salesmen offering at least 3 years experience.

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Field Engineering Manager to £24,000 tax free
To set and control a service organisation covering computers, WP, copiers and business equipment. Previous experience essential.

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To set up and implement training courses for computers, WP and business equipment throughout Saudi and possibly the Gulf region. Candidates must have a degree.

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with 2 years' IBM COBOL with CICS and DL1
Excellent progression and outstanding benefits package
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International Consultancy £12K

SYSTEMS DESIGNERS

with 2 years' programming experience on DEC PDP 11
Ambition, flair and an outgoing personality essential
Ref. 6423

Travel opportunity £15K
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with good first- or second-class degree, 4 years' IBM COBOL and/or PL1 on mainframes and some analysis experience
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to £19K

Knowledge of BT Services and Plans
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[1644]

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Banking Comms.

London **£9-11K+**

The communications centre of an International Bank requires additional programmers for the enhancement and support of their DEC and IBM Series 1 based systems. Large message switch and processing is via PDP11/70 and PDP11/34 systems with Series 1 links to B.T. telex. Macro-11 and IBM assembler required. Attractive bank benefits include low interest mortgage, free pension and restaurant.

Turnkey Comms.

N. M'sex. **£8-12K**

This expanding, turnkey vendor of Tandem computer systems is seeking highly motivated software people to work on advanced applications using Tandem equipment. Experience in communications and screen based applications using COBOL is required. The company has its own in-house Tandem system providing training on this very popular equipment. Candidates must be presentable.

Team Leader

Beds. **to £14,000**

We wish to recruit an operating system software specialist, preferably with UNIX experience, who will build then lead a team which is to provide a UNIX related environment on a range of mini-computers. The successful candidate will combine technical expertise with leadership and external communications skills, probably gained with a manufacturer or large systems house. Reloc. assistance.

Pascal M68000

Berks. **£8-10K+**

A number of software people are required to fill new vacancies created by expansion. Development is on PDP11/40 RSX11 using Pascal and Macro-11. The target machine is the M68000 micro for specialist comms. products in this high growth market. Two to five years experience is required for positions from programmer to team leader level.

S/W Support

W. M'sex. **£12-14K + car**

Take this opportunity to join one of the most successful computer companies of our time. You will need several years technical software experience to include: real time, data communications and/ or database systems. Analysts with banking or financial systems experience would also be of interest. You cannot fail to be impressed by this client. Higher salary but no car for City office location.

Analyst/Prog. Prime Minis

C. London **£10-12K**

A very prestigious company in international management consultancy and accounts is seeking an experienced commercial programmer for their in-house D.P. function. The company uses dual Prime minis, INFO and ADMIN for major applications. Experience in personnel and pension systems useful. Excellent prospects and benefits. This is an attractive career development move.

Project Leader S/W Releases

N.H. Counties **c. £13,000+**

A qualified software specialist is required to build and lead a new team which will be responsible for the introduction of new software for field trials. The successful candidate will be capable of dealing with internal technical and marketing staff as well as having a good client contact manner. Organising, planning and scheduling ability essential.

Field Engineer Adv. Micros

London **to £12K + car**

A British company with an advanced, flexible, micro-based business system is expanding into more markets and proving that home grown quality systems can be successful. A senior field engineer is required for the London office. The successful candidate will be given the opportunity to build the southern region F.E. team as the company grows.

DEC/RSTS Commercial

Avon **£8-10K**

A medium sized systems house specialising in PDP11 based commercial applications requires additional staff for continued expansion. Candidates must be capable of preparing specifications of clients' requirements and implementing systems to schedule. A positive manner for client contact is essential. BASIC is essential as is previous RSTS experience. Some Macro-11 useful. Attractive location.

Comms. Support

London **c. £14,000**

This is a very attractive opening for a software communications specialist to join a computer manufacturer in a front end support position. You will spend approx. 18 months on secondment to a City institution with the security of a permanent position in a rapidly growing company. A "nuts & bolts" networking person is required.

CP/M Systems Support

London **£8K + car**

A small, successful business systems development company which has specialised in commercial applications for CP/M based machines is seeking an experienced programmer who will be responsible for installation, training and support for the company's products. The position will appeal to a bright, young person who wishes to make a personal contribution to a company.

S/W and H/W Designers

Wilts. **£8-12K**

A major company in the development, manufacture and marketing of office systems requires additional technical staff in building project teams for current and future development. Micro based systems in W.P. and L.A.N. are being produced. This attractive sector of the market continues to expand. Relocation assistance where appropriate, plus attractive company benefits.

DEC Prog/Analysts

Beds. **to £10,000**

The working environment, the company and its products all rate A.1. with this client. Experienced RSX11/Macro 11 programmers will enjoy working on applications and systems for computer controlled analysis and measuring instruments. There are opportunities in special systems and standard product development. A physics degree would be useful. Some international travel.

Programmers Minis/Micros

Berks. **£7-12K**

A successful company with a product having a special place in the communications and travel industry, requires several programmers at different levels to join existing development teams. Areas of expertise relevant include Z80 Assembler, PDP11 systems, UNIX and 'C', PLZ, Viewdata, CP/M, comms and travel agency applications. Excellent benefits include special holiday discounts.

Software Specialists

Oxon **to £14,000**

A major international systems house with an outstanding reputation in software design and development is seeking a range of people from programmers to project managers. We are interested in meeting people with a strong computer science background who wish to work on compilers, utilities and development aids. Relocation assistance will be considered.

Sirius 1 Pascal Progs.

Berks. **£7.5-12K**

A very small, relatively new company has developed a sophisticated D.B.M.S. to run on the Sirius 16 bit micro. The product is written in Pascal and incorporates unique features which give it an attractive marketing advantage. Bright Pascal programmers are required to work on system tuning and refinements. Continued system development is planned for the future.

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London **£8-10.5K+**

A major systems house with many separate divisions has a requirement in its industrial and business systems division for a support analyst. The successful candidate will have previous experience in distribution applications. He/she will have an appropriate manner for a sales organisation and be prepared to install, implement and maintain systems. Excellent benefits.

Comms S/W Design

Herts. **to £12,000**

Develop your career and your existing communications software skills by joining a company already firmly established in this high growth sector of the computer industry. We are seeking software people with experience in developing 3270 compatible systems and as much experience as possible in X.25 and L.A.N. products. Experience in 'C' or PASCAL using M6800 and/or TI9900 would be useful.

Project Managers

Hants. **£15-20K + car**

Major accounts in the financial and commercial market continue to create demand with this large, successful systems house. Experienced people are required to manage, negotiate, advise, provide consultancy, each as required on a project. A background in commercial systems on DEC, ICL or IBM is preferred. Candidates must be prepared to travel.

Write or telephone (02403) 28383 during office hours — we are always ready to discuss these and many other interesting positions.

Evenings and weekends only: Terry Harvey – Great Missenden (02406) 4705

HR

H. R. Associates Limited

57a Hill Avenue, Amersham, Bucks. HP6 5BX. Tel: 02403 28383

HR

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NATIONWIDE

circa £20,000

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The outstanding success of the UK operation is a direct result of substantial investments in the development and enhancement of the product range, together with the high calibre personnel. There is an absolute commitment to the direct customer support of all present and future products. It is considered that their achievements have established a pattern of product and service excellence unequalled in the industry.

As a result of our Client's professional marketing stance and continued expansion, we have been retained to recruit dedicated Sales Executives for positions throughout the UK.

You will currently be a successful computer sales professional, operating in a commercial environment, combining a high level of business practice with the personal credibility and commitment that is necessary for these demanding, but rewarding positions.

Remuneration is by way of a high base salary, negotiable guarantee and commission structure designed to give an outstanding first year earnings package of c. £20,000. A Company Car and all large Company benefits will apply and full expenses will be provided.

For an immediate and confidential interview, where you will be supplied with full Company information, contact CATHY TRACEY on 0908 604848

(24 hour answering service).

CTA RECRUITMENT CONSULTANTS

Cathy Tracey & Associates Ltd

SILBURY BUSINESS CENTRE, 356 SILBURY BOULEVARD, CENTRAL MILTON KEYNES, MK9 2LR. TELEX: 825264

CONTRACTS ASSIGNMENTS

OVERSEAS

IBM TP/DATABASE	Consultants — Brussels
PASCAL	Analysts/ Programmers — Brussels
VME/B	Analysts — Kuwait
VME/B COBOL	Programmers — Kuwait
VME/B IDMS	Support Programmers — Kuwait
PRIME FORTRAN	Programmers — Kuwait

ANALYSTS

Management Information Systems
Pref. Focus or Prism Banking
Payroll PDP/VACS Some Programming Experience
Re-Insurance
Databas Administrator/ Designer IMS ADF

ICL

VME/B COBOL	All Levels
VME/B IDMS COBOL	

IBM

IMS DB/DC COBOL	Analyst/ Programmers
ADF COBOL	Programmers
DOS/CICS COBOL	Programmers
CICS/DIL COBOL	Programmers
CPG COBOL/PLI	Programmers
SYSTEM 34/DATAPOINT	Analyst/ Programmers
OS	JCL Writers

OTHER HARDWARE

OLIVETTI ASSEMBLER	Programmers
NCR COBOL	Analyst/ Programmers
FORTRAN GEOPHYSICAL	Programmer
HP3000 COBOL	Programmer
H66 IDS IMIV ON-LINE COBOL	Programmers

Ring Claire or Lynn NOW 01-388 2061 (1739)

ABRAXAS (Computer Employment Limited)

357 Euston Road London NW1 3AL

01-388 2061 (24 Hours)

SENIOR SYSTEMS/ DESIGNER

CENTRAL LONDON to £13,000 + BENEFITS

FINANCIAL APPLICATIONS DEVELOPMENT

Our client is a major financial company utilising IBM 4341 mainframes and a large communications network. The vacancy is a newly-created position which will be of interest to a person with a successful record as a Senior Programmer/Designer, gained in developing major systems using COBOL on IBM hardware.

The person required will be responsible for creati.., design documentation from a formal statement of user requirements and will probably supervise the work of other programmers.

It is expected that applicants will have extensive Online/Database orientated experience in an IBM mainframe environment, preferably having worked with structured programming techniques. In addition to this, the ability to communicate effectively not only with programmers and analysts, but also with the users is essential. Experience of financial applications is desirable. It is likely that the person required will be aged 25-40 and have at least five years' relevant Data Processing experience, most recently with program design at a senior level.

Conditions of employment and benefits are excellent including Non-Contributory Pension, Subsidised Restaurant and BUPA Membership. After a qualifying period there is an annual bonus and staff mortgage scheme.

To apply, or for further details, please contact JEFF RUBBERT in strictest confidence.

(1717)

ABRAXAS (Computer Employment Limited)

357 Euston Road London NW1 3AL

01-388 0111 (24 Hours)

PROJECT LEADER

DEC BASIC

We are acting for one of the U.K.'s most successful computer services groups, a publicly-quoted company offering bureaux and software services based around an impressive range of PDP and VAX hardware.

As a result of expansion in their commercial division, they now seek an ambitious Analyst/Programmer with at least 3 years' experience of programming and systems design using BASIC+ or +2 on DEC hardware. Experience of payroll, stock control and similar applications would be advantageous.

up to £12,000
(review March '83)

As Project Leader, you will be responsible for most aspects of the development of sophisticated systems using the latest DEC hardware and software methodology, encompassing pre- and post-sales support, systems design, programming and team leadership; a high degree of involvement with the company's clients is envisaged, and you will be encouraged to take an active part in the development of new business areas.

City of London

Prospects for advancement are excellent within a company noted for rapid growth and for young, progressive management.

BL

For further details, contact Barry Latchford on the number below or on Newick (082572) 3197 evenings and weekends, or send a brief c.v. quoting ref. 508

Barry Latchford Associates Tel. (0444) 459815/6/7
Blair House, 7 Hazelgrove Road, Haywards Heath, Sussex RH16 3PH

SALES APPOINTMENT

Due to expansion of our business we require an additional sales professional to assist us in the sales and marketing of our services.

Ideally candidates should have previous experience of software sales within the computer industry coupled with a demonstrable track record of achievement. A background of hardware or Bureau selling would be an asset but is by no means essential.

Our company has an excellent track record within the DP industry and previous clients include many household names. Company growth has been steady and further expansion is planned.

Based in London this position carries an excellent basic salary plus good commission and should lead to a total package of around £25,000 per annum on quota earnings. A company car and full benefits are also provided.

If you have commitment, imagination and drive together with a desire to work within a good team then we would like to hear from you.

To arrange an informal interview, contact Chris Morrow on 01-837 0451 (daytime) or 01-267 9409 (after 7.30pm)

TOTAL SYSTEMS LTD
388 CITY ROAD
LONDON EC1

(1339)

SMR
Sales & Marketing Recruiters Ltd
A Sales and Marketing Services Company

SALES EXECUTIVES
SOFTWARE
— The real future of computing!

There can be no doubt that as computing technology advances, software rather than hardware is becoming the predominant factor in end-user sales. Consequently, the role of the software salesman is rapidly increasing in importance.

Our client is one of the country's largest application software suppliers with products embracing nineteen different markets ranging from financial management through commercial accounting, to database management, involving over 4,000 users and based on over 13 years of operation in this highly specialised market place. The operation of the company is both national and international and above all, it understands the need and importance of comprehensive technical support.

We are seeking experienced sales people in

LONDON & HOME COUNTIES

from all sectors of the computer industry who have the presence, industry, creativity and business understanding to sell effectively to top management. In exchange we can offer an attractive income package which includes target earnings of

£25,000 AND COMPANY CAR

Please supply complete details to Peter Hubble or Alasdair Scott quoting reference HSE/2112.

(1726)

LONDON & SOUTH
29 Oxford Street
London W1. (01) 734 9776

MIDLANDS & NORTH
39 Bore Street, Lichfield
Staffs. (05432) 56612

Answering Service after 6 pm and weekends
SALES TRAINING, MARKET RESEARCH, RECRUITMENT

SMR
Sales & Marketing Recruiters Ltd
A Sales and Marketing Services Company

SALES EXECUTIVES
Are You Destined For Greater Things?

Our Client is one of the really big names in the Computer Industry whose research and development investment alone is in excess of £100M per annum. This prestigious company is a renowned pioneer in computing technology with a product range from mainframes to micros and a world leader in communications and distributed Network systems.

The attraction of this company to the successful professional salesman is it's truly sales and marketing orientated environment rather than the bureaucratic mentality that prevails among many of it's competitors. It's commitment to sales and product training implicit in it's own extensive education centre and the continual scope it provides for creative and strategic selling within a Multi-tier business environment calls for the highest level of professional selling skills.

Job opportunities now exist in the

NORTH WEST - MIDLANDS
LONDON & SOUTH

If you are a keen salesman with a successful selling record in any sector of the computer industry, especially mini computers or mainframes, and seeking to move to a high level of product or company experience we would like to meet you.

Your earnings will include a basic salary of up to £12,000 per annum with on-target earnings of up to

£24,000 & CAR

Please supply complete career details to Peter Hubble or Alan Williams quoting reference HSE/1112.

LONDON & SOUTH
29 Oxford Street
London W1. (01) 734 9776

MIDLANDS & NORTH
39 Bore Street, Lichfield
Staffs. (05432) 56612

Answering Service after 6 pm and weekends
SALES TRAINING, MARKET RESEARCH, RECRUITMENT

THE ASSOCIATED EXAMINING BOARD

Computer Operations Supervisor

A supervisor is now required to oversee a busy Operations Section comprising four operations staff. The Board utilises a Honeywell Level 64 DPS computer together with a comprehensive range of peripheral and terminal equipment for the administration of public examinations. The configuration is shortly to be enhanced and Database systems are being prepared for installation during 1983.

The successful applicant will have several years' operating experience of which at least two will have been in a supervisory capacity. Experience should have been gained in a medium-sized mainframe installation ideally including a local communications network. Experience of Honeywell computers would be of considerable advantage as would the ability to write J.C.L. instructions.

This post is on the salary scale of £5,557 per annum rising by six annual increments to £6,871 per annum, the point of entry being determined by qualifications and experience.

There is a contributory Pension Scheme and other benefits include Luncheon Vouchers, free car parking, 28 days' annual leave and a subsidised staff restaurant.

Application forms may be obtained from the Personnel Manager, The Associated Examining Board, Wellington House, Station Road, Aldershot, Hampshire, (Tel: Aldershot 25551), to whom they should be returned, marked 'Private and Confidential', not later than Friday, 3rd December, 1982.

(1720)

EAST MIDLANDS

Systems Analyst & Programmer
Permanent Jobs

CLAYTON COMPUTER SERVICES Leicester (0533) 556146 (Agcy)

(1181)

CAREER OPPORTUNITIES
for Programmers, Analysts, Sales Executives, Computer Engineers, etc.
Phone Colin Albin on 061-962 8341 (Transfer charges if necessary) or send C.V. to Solution (Recruitment Consultants), 83 Washway Road, Sale, Cheshire M33 1TQ.

(1528)

SCOTTISH HEALTH SERVICE
COMMON SERVICES AGENCY

The Agency has now established a new Computer Centre in Edinburgh with an ICL2966 running VME2900 and DME under C.M.E. A planned expansion of computing systems has created the following new posts:

Senior Systems Designer
(Scale 14), candidates for this post will be educated to degree level or equivalent with experience as a project leader. Knowledge of I.C.L. software and formal training in systems design desirable. Ref. U461/CW.

Intermediate Systems Designer
(Scale 8), one post with Prescription Pricing Project, to assist in feasibility study of full computerisation of Scottish Prescription Pricing, two posts in general projects. Candidates should be educated to degree level or equivalent with at least two years' design experience and some programming background. Ref. U462/CW.

Basic Systems Designer
(Scale 4), candidates should have formal computing qualifications and at least one year's experience in design or programming. Ref. U463/CW.

Programmers
(Scale 1), candidates must have either formal computing qualifications or at least one year's experience. Knowledge of Cobol essential, Fortran, Basic or Filetab desirable. Ref. U464/CW.

Data Control Supervisor
(Scale 1), candidates must demonstrate ability to assume charge of this expanding section. At least three years' experience of control work and formal qualifications in computing desirable. Ref. U465.

Salary: Scale 14 £9,480 to £10323
" 8 £7654 " £9277
" 4 £6694 " £8147
" 1 £5119 " £6694

For further details and an application form candidates should write to the Appointments Section, Common Services Agency, Trinity Park House, South Trinity Road, Edinburgh EH5 3SE. All forms must be returned by 2 December, 1982. Please quote appropriate reference number for post applied for.

(1709)

SALES BIT

Quality of Management

They may be an audience, but don't pay to get in!

MANY sales managers dread the thought of holding a sales meeting. For some it is a real fear of addressing an audience, for others it is the feeling of inadequacy at being unable to control a meeting, while in other cases the real problem is lack of ideas for putting a sales meeting together.

When you think about it, such feelings are completely unjustified for the sales manager has everything in his favour. Why should he be nervous when addressing people who are by no means strangers, indeed, they are subordinates whose very position suggests that their total spectrum of sales experience is likely to be less than that of their manager.

After all, they may be an audience but they didn't have to pay to get in!

Some managers are bad at speaking in public and for them a formal training course could be money well spent. However, for those who cannot be bothered with such things I can think of no better advice than simply concentrating on being yourself.

Don't be a copyist or expect to achieve the oratorial skill of Michael Foot or Arthur Scargill. If you really do get nervous when addressing the troops why not use the time-honoured public speaking trick of choosing a single (or even married!) member of the audience and addressing the whole presentation to him?

Alternatively, treat the assembly as if it were one person with a single identity. Many people find this technique helpful in overcoming the potential intimidation of an assembled crowd.

So, what is the purpose of a sales meeting? Now think carefully before you answer that one. Do your sales meetings occur because you always have one the last Friday in every month, or because there is a particular objective to be achieved?

Whatever happens in a sales meeting, the participants must depart feeling more confident and enthusiastic about their ability to achieve sales success with their company's products than when they went in. Maybe the predominant subject of the meeting is unavoidable bad news, but at least those present should come away with a positive reaction. They should leave the meeting completely convinced that they have the ways and means to handle whatever problems exist.

If the competition has brought out an amazing new product that has taken the market by storm, the sales manager must make sure he has discovered all the weak points, disadvantages and uncertainties as well as identifying the relative strengths of his own product before he calls a sales meeting.

Most sales meetings fail because they are not really sales meetings at all; they are more like bureaucratic orgies wallowing in administrative irrelevance and pedantic trivia. They are often a boring and demotivating collection of matters that should be dealt with in different circumstances.

If you must take Fred Arkwright to task about the high living implied by the nature of a recent expenses claim, do it some other time, like when you are out on territory with him. Besides which, such conversations in front of other colleagues are the height of bad manners and negative management.

If the sales meeting is the only time you see your salespeople (which means you shouldn't be in the job!) then take the opportunity of discussing the matter before or after the sales meeting.

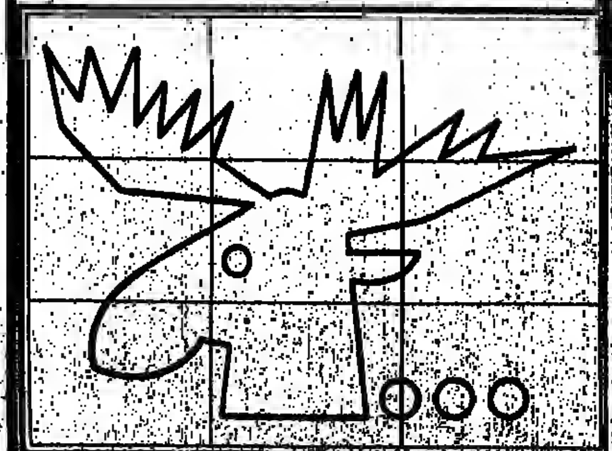
Okay, sometimes administrative matters have to be discussed. If that's the case, be sure to allocate a fixed time for the subject and let everyone know how long it will last. Once the time has expired chop it off completely.

It is also a good idea to set a target completion time for the end of the meeting so that everyone knows where they stand, especially yourself. Also bear in mind that any meeting over two hours in duration will begin to lose its effectiveness.

Above all, make your sales meetings interesting, even exciting if you can. Give them real meaning for all concerned. Don't allow the monthly sales meeting syndrome to degenerate to the point where your salespeople groan at the prospect of another weary session, where they become reluctant to attend.

Alan Williams

PUZZLE ANSWER



Switzerland

Telecommunications Software Development English Speaking Project

We have been retained by an international telecommunications company to recruit several SOFTWARE ENGINEERS to develop and implement software for a NEW PUBLIC DATA SWITCHING SYSTEM, involving working on Operating Systems, Diagnostics, Telex applications and X25 Interfaces.

Candidates should have a degree, 18 months plus Assembler experience, preferably in a Telecommunications environment on minicomputers. An in-depth knowledge of real Time Operating Systems would be advantageous.

Successful candidates may look forward to enhancing their career prospects, gaining valuable experience in an international environment.

Interviews will take place in London in December. For further details on the above company, conditions of employment and living in Switzerland. Please send a C.V. or telephone for application form quoting the reference number. CW46/1

(1721)

RECRUITMENT SERVICES
01-399 9183
Datamatics, Freepost, Surbiton, Surrey KT6 5BR

FORTRAN?
SUPPORT CONSULTANT
VIDEOTEX

C. London — **to £11K + Car**

Our client is the European Headquarters of one of the largest computing services organisations in the world. Totally committed to the development of leading-edge, on-line systems the company is seeking to recruit a Customer/Sales Support Specialist in the area of Videotex.

Running on DEC equipment and accessible in either a stand alone capacity or as a bureau service the system is probably the most advanced available in the UK.

Working closely with the sales force the Support Consultant will be the point of contact between the user and the company. He will be involved in analysis and design work prior to systems installation and in user support thereafter. The successful applicant will have the following skills:

- Sound knowledge of Fortran
- Mini computer experience (useful but not essential)
- Good educational background
- Outgoing personality and the ability to communicate.

In return for this experience the position offers an opportunity to work for one of the most successful and dynamic service companies in an area of technology which is becoming increasingly important. Interviews will be held in Reading and Central London. For further information phone Andrew Cousins or write enclosing full C.V.

MCL — McCOURT COUSINS LTD, 27-29 Greyfriars Road, Reading, Berkshire
Tel: Reading (0734) 595346

[illegible] MINI/MICRO PROGRAMMERS

Our client Formal Communications, a small but established company in the field of message switching, have now embarked on a major expansion phase creating opportunities at all levels for the support of existing products and a major development project.

Candidates with one-five years' experience, should be able to work with the minimum of supervision, communicate clearly, and have experience in some of the following areas: Mini/Micro computing in a technical environment, Communications, Assembler/Pascal, Real-time Systems, Word Processing.

Based in Uxbridge. Salaries will reflect responsibilities and previous experience.

Contact Richard Gaskell on the number below.

[illegible]

FREELANCE PDP 8 & 11 STAFF FOR RSTS/E BASIC +, BASIC + 2, RMS. DOS PAL-8 ASSEMBLER
01-732 2944
(1730)

TAMESIDE COLLEGE OF TECHNOLOGY COMPUTER STUDIES UNIT

LECTURER I in COMPUTING

Required to contribute to the work of the Computer Studies Unit which includes NCC Threshold Course, BEC/TEC National Certificate Course, MSC Work Skills Course as well as a wide range of part-time courses and servicing work for other departments.

Further details and application forms are available from:

The Principal, Tameside College of Technology, Beaufort Road, Ashton-under-Lyne, Lancashire OL6 6NX (Greater Manchester) to be returned no later than 14 days after the appearance of this advertisement. Ref: T.E. 2108/CW.

(1718)

OPERATIONS SUPPORT
IBM 4300-OS/VS1

£10,500 [illegible]

LONDON

Due to continued expansion, an excellent opportunity has arisen for a highly-motivated individual to perform an important liaison/support function with our prestigious London-based client.

We seek candidates with in-depth technical knowledge, the flexibility to absorb new skills in an everchanging environment and previous supervisory experience gained in this type of role.

You should have the ability to maintain a high standard of documentation and to communicate effectively at all levels.

The successful candidate will be assured of involvement and responsibility within a progressive organisation, genuine long-term prospects, a competitive salary and attractive benefits package.

For further details, telephone now or send your c.v. to the address below, quoting ref. J1465.

COMPUTER TWO THOUSAND LTD
D.P. Recruitment Consultants
217-218 Tottenham Court Road
London W1P 9AF
Tel: 01-636 7584 (24 hrs)

[illegible]

We are Scientific and Business Systems, a systems/software house established for over 12 years. Originally specialising in project work and package development, SBS became one of the leading specialists in the Honeywell software market. Through planned diversification, we are now successfully involved in other areas including Consultancy, Turnkey Systems and specialist Advertising and Recruitment.

With this experience and commitment, we feel able to offer a genuine consultancy service, by understanding the requirements of both client and applicant. The following positions are an example of some current assignments. However, whatever your experience, we would be pleased to discuss your present career ambitions and offer you a professional and discreet service.

[illegible] PROG [illegible] A/P to [illegible]

Working in a small friendly environment, our client offers you an opportunity to develop a range of financial/commercial systems vital to their continued success. Based in London, our client is a leading 'brand name' company with a very high percentage of on-line systems. As Programmer you should have at least 2 year's Cobol and for the Team Leader A/P an additional 2/3 years in analysis. Quote ref. A.H. 620.

RPG II A/P BANKING to c£13K+

We have been retained by a large International Bank to discuss opportunities with experienced System 34 Analyst/Programmers. Due to expansion of their computer systems and increased user demand, they are interested in discussing high-level roles with applicants who have at least 2 year's relevant technical knowledge either in a Banking, Insurance or Financial environment. User liaison skills are of course much used in their particular business. Please quote ref. MO 552.

SYSTEM 34/38 PROGS+A/P to c£[illegible]K

We have an excellent reputation in the IBM OSD market and therefore have access to an interesting variety of positions in all application areas including, Manufacturing, Insurance and Accounting systems. Some clients will be retraining individuals from RPGII to RPGIII, and also offering analysis experience to programmers. Please quote ref. M G.N.

[illegible] [illegible] to c£[illegible]K

On behalf of a world famous company, we would like to talk to experienced IBM Cobol specialists with strong on-line and/or Database knowledge. Our client is embarking on an ambitious and wide-ranging development programme including challenging new areas such as Point of Sale. Based in Central London, these positions are open to applicants with a min of 2 year's experience. Please quote ref. SG 584.

IBM PROGRAMMER to c£8.5K

The commercial arm of a major technology company in Croydon are interested in young ambitious programmers, with between 1 and 2 years Cobol experience you will be given the opportunity to work in a CICS/DL1 environment with a positive attitude to training and career progression. We can personally highly recommend this organisation and ask you to quote ref. SG 578.

MINI COBOL HP/VAX to c£11K

Due to the success of both these large minis, there is a strong demand for experienced Programmers and Analyst/Programmers. Our clients, who are based in London and the surrounding counties are particularly keen to discuss openings with applicants who have on-line and/or database experience, (though not essential). This is because a great deal of their current work is brand new and will incorporate fully the latest technology available. Please quote ref. AG.N.

All applications are accepted in strict confidence and we are able to offer preliminary personal interviews to all interested candidates. Please call us on the number below, quoting the relevant ref. We also have an answerphone from 7.00 p.m. onwards, if it is more convenient.

SBS RECRUITMENT SCIENTIFIC & BUSINESS SYSTEMS LTD
32 BEDFORD SQUARE, LONDON WC1B 3EG
01 580 3848 (24 hr answerphone)

Major Account Sales

£30,000+ Realistic Earnings — Choice of Prestige Car — Negotiable Guarantee Period

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– FINANCE –
– COMMERCE –
– INDUSTRY –

MIDLANDS
SOUTHERN ENGLAND
LONDON
NORTH

Retained by one of the world's most exciting computer manufacturers, we have been asked to identify a number of seasoned professionals to complement an existing, highly motivated and extremely successful national sales force.

Our Client's UK penetration throughout 1982 has seen the continuation of what can only be described as an exceptional and unique worldwide growth pattern and the coming year holds every indication of even greater market domination in the field of on-line transaction processing and distributed data processing.

The future growth of the Organisation is dependent upon the ability to maintain the high calibre of individual already evident in the current sales teams – for consideration, therefore, your credentials will be examined against the following criteria:

* Above average achievement in computer sales.
* Experience of major company, high value negotiations.
* Ability to acquire new business over long term decision periods.

Equally important are the personal attributes – the maturity to negotiate at senior level; the professional presence; the desire and tenacity to win in competitive situations.

The financial rewards are comparable to the best within the industry and you will find the spirit within our sales force highly stimulating – if you wish to share in our future success, please contact:

For positions in London and the South: Peter Dudgeon on 01 935 0671 (24 hour answering service). Grace Baskeyfield on 01 891 1555 evenings.

For positions in the Midlands and North: Clive Wadelin on 021 236 3781 (24 hour answering service) or 021 449 6125 evenings.

(1731)

Technical, Sales & Management Appointments
SCR
Specialist Computer Recruitment Ltd

SOUTH	MIDLANDS & INTERNATIONAL	NORTH	BELGIUM	HOLLAND
James House, 46 James Street, London W1M 5HS	35-37 Great Charles Street, Queensway, Birmingham B3 3JY	International House, 84 Deansgate, Manchester M3 2ER	Avenue Louise 327, Boite 4, 1050 Bruxelles	Willemsparkweg 92, 1071 H.M. Amsterdam.
01-935 0671/488 0461	021-236 3781	061-833 0427	010 322-640 7151/71	010 3120-760947